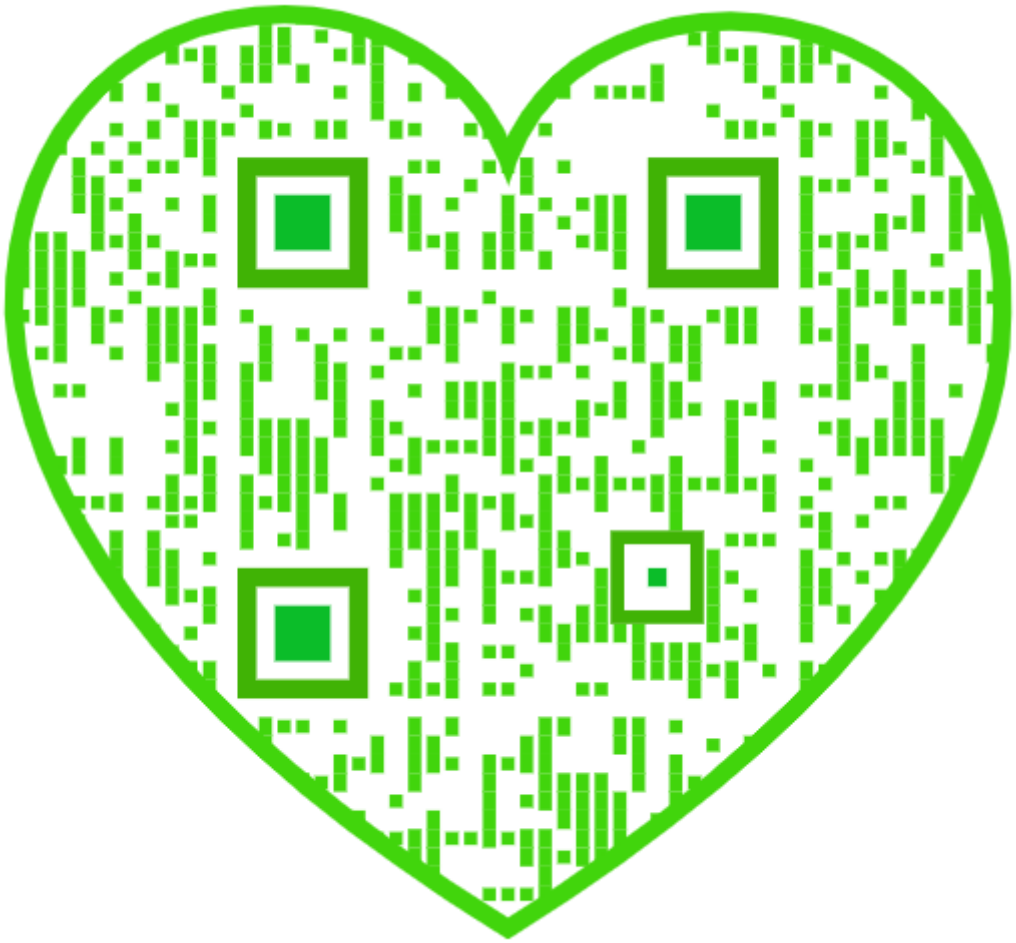
UC-NRLF
$B 261 947



HENRY COOK,
Dealer in
New and Second-Hand Books
Autographs, Rare Coins, Medals, &c., &c.
Highest Price paid for Old Gold and Silver.
47 Waltham St., BOSTON.

3338
Kh L
D

THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA

PRESENTED BY
PROF. CHARLES A. KOFOID AND
MRS. PRUDENCE W. KOFOID

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/nolanssystemfort00garrrich

Cantering Exercise

Spiral
Working in
D.° Working out
Serpentine
Canter

Cutting Heads

Instructor

1/4
1/2
3/4

Walk
Canter
Speed

NOLAN'S SYSTEM

FOR

TRAINING CAVALRY HORSES.

BY

KENNER GARRARD,

CAPTAIN FIFTH CAVALRY, U. S. A.

NEW YORK:
D. VAN NOSTRAND, 192 BROADWAY.
1862.

c Dan Gn

Entered according to Act of Congress, in the year 1862,
By D. VAN NOSTRAND,
In the Clerk's Office of the District Court of the United States,
for the Southern District of New York.

C. A. ALVORD, STEREOTYPER AND PRINTER.

UE 470
G3

PREFACE.

This "System for Training Cavalry Horses," is based upon the principles of equitation discovered by Monsieur Baucher, of France, and originally arranged by Captain S. E. Nolan, 15th Hussars, English Army.

Captain Nolan's work is now out of print, and to preserve to the Cavalry Service so valuable a "System," this book has been prepared for publication. It is essentially the same as the original, with the addition of a chapter on "Rarey's Method of Taming Horses," and one on the subject of "Horse-Shoeing."

For the plates illustrating the following pages, the author is indebted to the skill and kindness of CaptainW. H. Bell, 3d Infantry.

West Point, October 1*st*, 1861.

M9134

CAPTAIN NOLAN'S PREFACE.

ARMY AND NAVY CLUB,
10*th August*, 1852.

SINCE this book was put in the printer's hands, I have been travelling on the Continent. Everywhere, I found that Monsieur Baucher's new Méthode had excited much attention, and not a little jealousy amongst the followers of the old system. Books and pamphlets have been published, trying to turn into ridicule the bold intruder, who, in two months, brings his horses to do what years could not accomplish in the old school.

In France, Baucher's Méthode was subjected to a trial, which, according to the reports of many members of the committee, was eminently successful. The system was rejected notwithstanding; but some of the bending lessons—the most important part of his méthode—were retained, and are now made use of in the French cavalry.

In what I have seen in the different foreign riding-schools which I have visited, I have found no reason to change my opinion regarding the advantages to be derived from the application of part of Monsieur Baucher's Méthode, to the purposes of cavalry; and I

have endeavored to take from both systems what I found best in practice, namely, from the old system, the principle of first bringing out the horse's action, improving his paces, giving power and freedom to his movements; and from Monsieur Baucher's, those lessons which enable us to control that action, and thus regulate the horse's paces, and render him handy and obedient.

CAPTAIN NOLAN'S INTRODUCTION.

This new system of equitation was invented by Monsieur Baucher; and for any thing that is good in this book, the credit is due to him.

I had, at first, intended translating his work from the French; but experience showed me that certain modifications were necessary to adapt it to the use of our cavalry. I therefore determined on publishing the lessons as I myself had carried them out, with many horses of different breeds and countries, adding what my experience suggested; and as I found that those lessons succeeded with all, without exception, I can safely assert, that any horseman of common capacity, following them out in the same way, will break in his horse perfectly in about two months' time.

The system rests on a few simple principles, showing how to attack each point in succession, and thus enabling the rider at last to reduce his horse to perfect obedience. The horseman, in the success he daily obtains, finds a constant incitement to continue his exertions; the only thing to guard against is undue haste, and the wish to obtain too much at once.

By this plan the time of training is shortened so

much, that one's interest in the daily progress of the horse never flags; the man works with good-will, and many a horse is thus preserved from the effects of bad temper in the rider.

It saves many a young horse from the ruin occasioned by the use of the longe and other substitutes for skill in the riding-school.

The progress made is so gradual that it never rouses the horse's temper.

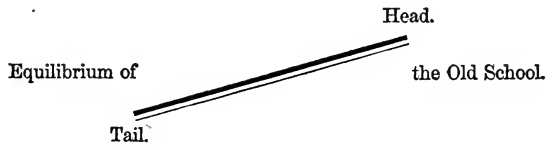
It improves the horse's paces, makes him light in hand and obedient, adds greatly to the appearance and efficiency of each individual horseman, from the way the horses learn to carry themselves, and the confidence the man naturally has, when riding an animal he feels to be completely under his control.

In case of emergency, Cavalry could, by this system, prepare any number of young horses for the field in an incredibly short space of time; for though about two months are required to complete the Lessons, the horses could be made available for service much sooner.

All other books on equitation speak in general terms, but never point out where to begin, how to go on, or when to leave off.

According to the old school, when you had arrived at the "height" of perfection, your horse was constantly sitting down on his haunches—"a great object to have gained, after a couple of years' hard and dull work!"

In the old school much was written about equilibrium; the horse's hind-legs were drawn under him and rooted to the ground, whilst his fore legs were always scrambling in the air;



and those horses that were perfect had acquired a way of going up and down, much resembling the motion of a hobby horse: too much weight was thrown on the haunches, and a horse could neither raise his hind-leg to step back when required, nor could he dash forward with any speed whilst made to throw his weight backward.

The horse, again, whose weight was thrown forward was still worse and more dangerous, for the weight of the rider often brought him to the ground, and at all times the bearing on the hand was so great as to require the strength of both arms to resist it—thus, the horseman, having no power over his horse, became in a great measure useless as a soldier.

BAUCHER'S EQUILIBRIUM.

The true equilibrium, which is neither on the

haunches, nor on the forehand, but between the two, Mons. Baucher alone has shown us how to obtain, by carefully gathering up and absorbing one by one all the resources of the horse, and uniting them in one common centre, where they are held at the disposal, at the sovereign will and pleasure, of the horseman.

CONTENTS.

PAGE.

CAPTAIN NOLAN'S PREFACE..... 3
CAPTAIN NOLAN'S INTRODUCTION..... 5
PREPARATORY REMARKS..... 11

ON THE SNAFFLE.

LESSON FIRST (five days)..... 16
LESSON SECOND (five days)..... 18

THE BIT.

GENERAL REMARKS..... 20
PREPARATORY LESSON (two days)..... 22

HORSES BITTED.

LESSON FIRST (seven days)..... 23
Dismounted Bending Lessons.—Mounted Bending Lessons.—How to teach a Horse to obey the Pressure of the Leg.

LESSON SECOND (seven days)..... 32
Circling on the Haunches.

LESSON THIRD (seven days)..... 34
The use of the Spur.—Reining Back.—The Horse's Paces—Walk, Trot and Canter.

LESSON FOURTH (five days)..... 47
Circling on the Forehand and Haunches to both Hands.

PAGE.

LESSON FIFTH (seven days)..... 49
On the Haunches about.

LESSON SIXTH (seven days)..... 50
Going about on the Forehand.

LESSON SEVENTH (fourteen days)..... 51
Perfecting the Horses in the preceding Lessons.

A SHORT EXPLANATION OF THIS SYSTEM BY QUESTIONS AND ANSWERS..... 54

PIAFFER..... 59

LEAPING, HOW TO BE PRACTISED..... 61

TRANSLATION FROM MONSIEUR BAUCHER'S METHODE D'EQUITATION, 62

ON THE PERFORMANCE OF HORSES AT LIBERTY..... 72
To make a Horse limp in Imitation of a Lame Horse.

RAREY'S METHOD OF TAMING HORSES..... 83
Teaching a Horse that Man is his Master.—How to make a Horse lie down.—To accustom a Horse to a Drum.

HORSE-SHOEING..... 96
Preparing the Foot.—The Shoe.—Choosing a Shoe.—Cutting off the Heels.—The Nail-Holes.—Fitting the Shoe.—Filing up the Nails.—Nailing on the Shoe.—The Hind-Shoe.—Removing Shoes.

NOLAN'S SYSTEM

FOR

TRAINING CAVALRY HORSES.

PREPARATORY REMARKS.

The health and condition of the horses should be carefully considered, and great care be taken not to overfatigue them by too violent exertion; punishment never being inflicted on a young horse, except for decided restiveness, and downright vice. Even in that case, your object only being to oblige him to go forward, you will, the moment he moves on, treat him kindly.

When a horse resists, before a remedy or correction is thought of, examine minutely all the tackle about him. For want of this necessary precaution, the poor animal is often used ill without reason; and being forced into despair, is in a manner, obliged to act accordingly, be his temper and inclination ever so good.

Horses are by dègrees made obedient through the hope of recompense, as well as the fear of punishment. To use these two incentives with judgment

is a very difficult matter, requiring much thought, much practice, and not only a good head, but a good temper; mere force, and a want of skill and coolness, tend to confirm vice and restiveness. Resistance in horses is often a mark of strength and vigor, and proceeds from high spirits; but punishment would turn it into vice.

Weakness frequently drives horses into being vicious when any thing wherein strength is necessary is required of them. Great care should be taken to distinguish from which of these causes the opposition arises.

It is impossible in general to be too circumspect in lessons of all kinds, for horses find out many ways and means of opposing what you demand of them. Many will imperceptibly gain a little every day on their rider; he must, however, always treat them kindly, at the same time showing that he does not fear them, and will be master.

Plunging is very common amongst restive horses. If they continue to do it in one place, or backing, they must be, by the rider's legs and whip firmly applied, obliged to go forward; but, if they do it flying forward, keep them back, and ride them gently, and very slow, for a good time together. Of all bad tempers in horses, that which is occasioned by harsh treatment and ignorant riders is the worst.

Rearing is a bad vice, and, in weak horses especially, a dangerous one; whilst the horse is up, the

rider must yield the hand, and at the time he is coming down again, he must vigorously determine him forward; if this be done at any other time but when the horse is coming down, it may add a spring to his rearing, and make him come over. If this fails, you must make the horse move on by getting some one on foot to strike him behind with a whip. With a good hand on them, horses seldom persist in this vice, for they are themselves much afraid of falling backward. When a horse rears, the man should put his right arm around the horse's neck, with the hand well up, and close under the horse's gullet; he should press his left shoulder forward, so as to bring his chest to the horse's near side; for if the horse fall back, he will then fall clear.

Starting often proceeds from a defect in the sight, which, therefore, must be carefully looked into. Whatever the horse is afraid of, bring him up to it gently, and if you make much of him every step he advances, he will go quite up to it by degrees, and soon grow familiar with all sorts of objects. Nothing but great gentleness can correct this fault; for, if you inflict punishment, the dread of chastisement causes more starting than the fear of the object; if you let him go by the object without bringing him to it, you increase the fault, and encourage him in his fear.

However, if a horse turns back, you must punish him for doing so, and that whilst his head is away

from the object; then turn him, and ride him quietly up toward what he shied at, and make much of him as long as he moves on; never punish him with his head to the object, for if you do he is as badly off with his head one way as the other, whereas, when the horse finds out that he is only punished on turning back, he will soon give it up. If a horse takes you up against a wall and leans to it, turn his head to the wall and not away from it.

When remount horses join a regiment, they should be distributed amongst the old horses; they thus become accustomed to the sight of saddles and accoutrements, &c., &c., and the old horses on each side of them, taking no notice of all these things, inspire the young ones with confidence.

The veterinary surgeon first takes them in hand, and a dose of physic previous to their going into work is advisable; meantime the men should handle them, and saddle them quietly, under the superintendence of a non-commissioned officer, and thus quietly prepare them for instruction.

The first day they are led out to the drill-ground in saddles and with snaffle-bridles, and the instructor should inspect the saddles to see that the cruppers and girths are rather loose, so as not to inconvenience the horses; he should then order the men to mount quietly, and at once walk them around in a large circle, and whilst so doing, divide them into squads of not more than sixteen each. He should pick out

all the horses that are in poor condition, or weak, or very young, and make a squad of them, giving them less work than the others.

The instructor should allow no shouting, nor noise in the squads, and even the words of command should be cautiously given at first, in a quiet tone of voice, so as not to startle or set off the young horses. When the squads are told off, they are filed to stables. If any of the horses are intractable, the men should dismount and lead them; but those that go quietly should be ridden to and from the drill-ground, care being taken not to allow them to close up nearer than six feet.

Check-reins fastened to the saddle are a great help to a man at first, in keeping the horse's head steady, and they never do harm; but they should always have some play, and the man must never be allowed to pull upon them.

If any of the horses will not allow the men to mount, put a cavesson on, stand in front of the horse, raise the line with the right hand, and play with it, speaking to the horse at the same time to engage his attention, whilst the man quietly mounts; no one else should be allowed near, as the more people round a horse the more alarmed he is, and the more difficult to manage. As soon as the man has mounted, turn your back to the horse and walk on, leading him round with the other horses—he will soon follow their example. A few dismounted men are necessary to

take hold and lead those horses that are unsteady when mounted, and if any one of them stands still, take care that the man trying to lead him on does not pull at his bridle, and look him in the face, which will effectually prevent the animal from moving forward; make the man who leads the horse turn his back and go on, and, in almost every case, the horse will follow.

"The instructor should insist on the men using their horses gently; he will thus save much time, and gain his object."

ON THE SNAFFLE.

First Lesson.—(Five Days.)

WHERE there is no riding-house, and there are but few in the United States, the instructor should lay off a rectangular track on a level piece of ground for his riding-school; for squads of sixteen horses or less, two hundred and fifty feet by eighty are suitable dimensions.

During these first lessons old horses should lead off, and a few dismounted men be with the different squads, to assist in keeping the horses in their places when required.

The first point to gain is to get the young horses to go forward, and to go willingly; they should therefore be allowed to walk three or four times quietly

round the school, be patted and made much of; the men should be without spurs, and use, when necessary, a small cane, or a stiff whip without a lash.

The word "*Trot*" is then given, and the horses are urged to trot their best, and though some confusion is likely to occur, the instructor is cautioned not to bring them to a walk at once, as this may increase it; but he should keep them going for a short time, then bring them down to a walk and halt them. (The dismounted men are here found useful). Let the men sit at ease, speak to and make much of their horses. During this lesson, the men must give the horses their heads, and only use the reins to keep them in their places.

After a short rest, repeat the trotting, and remember that the "object" now is to get the horses to go; the pace must not be confined in any way, but the horse should have the greatest freedom, and be made to step out to his utmost at the trot, without any regard to distances being kept. After they have been at work in this manner for a quarter of an hour, bring the squad to a halt, and begin to teach the horses to obey "the feeling of the rein"—thus:

The men must not play with the snaffle-rein, but merely draw it quietly to the side they wish to bend the horse's head to, always having a feeling of the other rein; and if the horse follows the indication of the rein only a few inches, bring his head straight again, with the outward rein, and make much of him.

The instructor must explain that the object of bending a horse's head to the right, or left, is not to supple his joints, as many suppose—for a horse in freedom can lay hold of his tail—but to teach a horse to follow with his head to whichever side the rein is drawn to; and thus early must it be impressed upon the men's minds not to allow the horse to take the initiative in any thing, and when his head is bent to the right or left, he must not be allowed to throw his head to the front of his own accord, but it must be brought quietly back again by the rider's hand.

This lesson, altogether, not to last more than half an hour, and to be repeated every day until all the horses trot well out. About five lessons will, generally, bring them to it.

Second Lesson.—(Five Days.)

Begin to collect the horses both at a walk and a trot. At a walk, the man must be taught to raise his horse's forehand, by keeping his snaffle in constant play, and not allowing the horse to lean upon his hand. When he does so, the man must draw his snaffle from right to left, with a sawing motion, till the horse raises his head, and bears no weight upon his hand.

In all these lessons, a man must sit well down in his saddle, keep his body upright and his shoulders well back. He should not lean forward or bear his weight on the stirrups.

Begin by circling to the right, and give the word

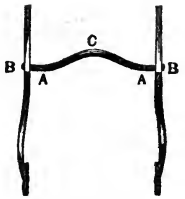
"*Trot*;" let the leading file ride a very collected pace; tell the men to feel the horses up with both reins at every step, and those horses that are sluggish must now be worked well up to the hand; make the men use their canes or whips on the horses' shoulders, but be particularly attentive to prevent them from having a dead pull on their horses' mouths.

When trotting, the snaffle is used differently to what it is at a walk, both reins being equally felt at the same time, and that whenever the horse is in the act of putting his foot to the ground, not when raising it. This being hard work for men and horses, bring them to a walk every two or three turns on the circle, and then give the word "*Trot*" again; the same to the left; then "*Forward*," "*Walk*," and finish by trotting out a couple of turns to each hand round the school. Before leaving the school, devote a few minutes to bending the horses' heads to the right and left. The lesson not to last more than half an hour, and in five days the horses, if properly ridden, should be sufficiently collected and tractable to be bitted.

These lessons on the snaffle form no part of M. Baucher's system, who begins his work at once on the bit; but Captain Nolan found, by experience, that the horses were brought on quicker in the end, and better, by going through these lessons on the snaffle. With troops, he considers them absolutely necessary, though a single horseman might dispense with them.

THE BIT.

The best bit for all purposes is a light one, the checks of an average length, and the mouth-piece merely sufficiently arched (c) to admit of the horse's tongue passing freely underneath it, points A, A, made straight, to rest equally on the horse's jaw, and not too thin.



And in choosing a bit for a horse, the point to look to is, the distance between B, B, which should vary according to the breadth of the horse's mouth.

A bit of this sort is quite sufficient to bring most horses under control, for it is a mistaken fancy that the opposition a horse offers to the rider's hand, is caused by the peculiar shape of his mouth, or that one horse's mouth is by nature much more sensitive than another.

The jaw-bone of every horse is covered in the same way; whether a horse be light or heavy in hand, cannot, therefore, depend upon the quantity of flesh between the bit and the jaw-bone, though many suppose this to be the case; but the fact is, it is not the horse's mouth that is hard, but the rider's hand that is in fault.

Many and various are the bits in use, originating chiefly with the trade, and partly the inventions of those who, unable to control their horses, sought assistance in bits of different sorts. For instance, when a horse carries his nose up, a bit with long checks was recommended, which, by adding to the power of the lever, should assist the hand to pull in the horse's nose by sheer strength. In this case, if the horse has never been taught to yield to the pressure of the bit, and to bring his head in, he will set his jaw against the bit to alleviate the pain he suffers, and thus adopts a way of his own, which he will ever after recur to in similar circumstances.

Other bits again are such instruments of torture, that they either deaden all sensation in the horse's mouth, which becomes numbed, from the excessive pressure stopping the circulation of the blood, or they drive a horse frantic with pain, and no power the rider can exert with his legs, can bring the animal to face such a bit; the horse, therefore, remains behind the hand, and "hand and leg" cannot work together.

A light bit is therefore strongly recommended, and in the following lessons, it will be explained how to use it and obtain obedience. In the United States service, the snaffle in connection with the bit, was a few years since discarded from the bridle, and though after the horse is trained the snaffle may be dispensed with, in the following lessons its use will

greatly faciliate bringing the horse on, and is believed to be almost essential.

ON THE BIT.

Preparatory Lesson.

Before commencing the bending lessons, it is well to give the horse a preparatory one of obedience, and to make him sensible of the power that man has over him. This first act of submission, which may appear of but slight importance, will prove of great service; it makes the horse quiet, and gives him confidence, and gives the man such ascendency as to prevent the horse at the outset from resisting the means employed to bring him under control. Two lessons of half an hour each will suffice to obtain this first act of obedience from the horse.

Go up to him, pat him on the neck, and speak to him; then taking the bit-reins at a few inches from the rings with the left hand, place yourself so as to offer as much resistance as possible to the horse when he tries to break away; take the whip in the full of the right hand, with the point down, raise it quietly and tap the horse on the chest, on which he will naturally try to escape from the punishment, and rein back to avoid the whip; follow the horse whilst backing, pulling at the same time against him, but without discontinuing the application of the

whip in the same quiet way, showing no signs of anger or any indications of giving in.

The horse, soon tired of trying to avoid the infliction by backing, will endeavor to do so in another way; he will rush forward, and then you must at once stop using the whip and make much of him.

This repeated once or twice will prove wonderfully successful even in the first lesson.

The horse, having found out how to avoid the punishment, will not wait for the application of the whip, but anticipate, by moving up at the slightest gesture; this will be of the greatest assistance in the subsequent bending lessons, as also of great use in mounting and dismounting, and in every way accelerate the training of the horse.

HORSES BITTED.

First Lesson.—(Seven days).

Dismounted Bending Lessons.—Mounted Bending Lessons.—How to teach a Horse to obey the Pressure of the Leg.

The horses (being bitted, the curb-chains rather loose) are walked round the riding-school once or twice to quiet them; the squad is then brought "to the right," or "to the left," halted, and the men ordered to "dismount" and begin the first bending lesson with the bit.

The balance of the horse's body and his lightness in hand depend on the proper carriage of the head and neck, and to these two points we must first and chiefly direct our attention. They should always precede and prepare the horse by their attitude for every movement about to be executed, and the rider has no power over the animal until he has rendered both these points susceptible of every impulse communicated by him. It stands to reason that if they do not lead in all turns and changes of hand, &c, &c., if in circling they are not bent to the circle, if in reining back the head is not brought home, if their carriage is not always in keeping with the different paces, the horse may execute the movements required of him or not, as he pleases, for his resources are still at his own disposal.

A young horse generally attempts to resist the bit, either by bending his neck to one side or other, setting his jaw against it, carrying his nose high up, or low down. We must, therefore, render him manageable by bending him to the right, left, and "up and down," that is, teaching him to bring his head home, and to arch his neck on the reins being felt; against this last bend the horse generally defends himself most successfully, by setting his under-jaw, or closing it firmly on the bit, and, as nothing can be done with him until he has been taught to yield to the hand, we must begin our work with the following bending lessons, and we shall find that, in a short

time, horses that require the whole strength of a man's arm to make them obey the action of the bit on the bars, will bend to the slightest feeling of the reins; for, finding that they cannot resist the power of the bit used in the manner hereafter shown, their instinct will teach them to obey, and habit accustom them to yield to the impulse received from the rider; thus they become handy and obedient.

As a general rule, in all the ensuing bending lessons, when a horse champs the bit, it is a sign that he no longer resists the action of the hand; then make much of him, and allow him to resume his natural position. It is of the utmost importance that the horse never be allowed to take the initiative. "Always oppose the raising of the horse's head—always lower your hands and bring it down."

See that the bit is properly placed in the horse's mouth, and the curb so that you can pass your finger under it; place yourself on the near side in front of the horse's shoulder, facing inward, the feet a little apart to give you more power.

Take the off bit rein in the full of the right hand, close up, with the ring of the bit between the forefinger and thumb; the near rein in the same way with the left hand, thumb-nails toward each other, and little fingers outward; bring the right hand toward the body, extending the left one from you at the same time, so as to turn the bit in the horse's mouth (vide plate 1).

The strength employed must be gradual, and proportioned to the resistance met with, taking care at first not to bring the horse's nose too much in, or too close to his chest, which would make the bend very difficult; if the horse reins back, continue the pressure until he, finding it impossible to escape from the restraint imposed upon him by the bit, held thus crossways in his mouth, stands still and yields to it.

When the bend is complete, the horse will hold his head there without any restraint, and champ the bit (vide plate 2); then make much of him, and allow him to resume gently his natural position, but not to throw his head round hurriedly.

Practise this in the same manner to the left.

This lesson not only teaches the horse to follow the indication of the rein to both hands, but also to yield his under-jaw to the pressure of the bit, the advantages of which will soon be apparent. And now, before mounting, prepare the horses to rein in.

For this purpose, cross the snaffle-reins behind the horse's jaw, taking the near rein in the right hand and the off rein in the left (vide plate 3, fig. 1), at about six inches from the rings, and draw them toward each other till the horse gives way to the pressure and "reins in" (vide plate 3, fig. 2). Do not forget to oppose the raising of the horse's head by lowering your hands, and bringing it down again, as before mentioned.

When the horse gives way to the cross pressure

Fig.1.

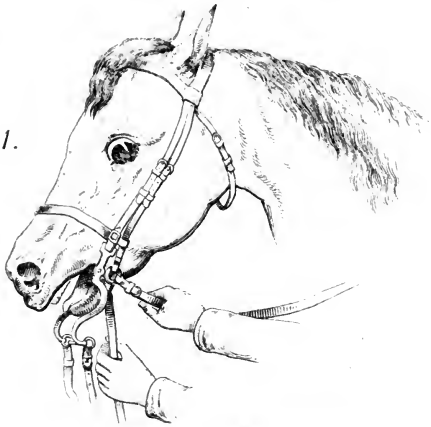
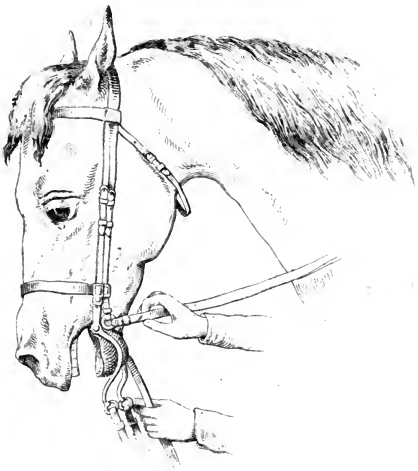
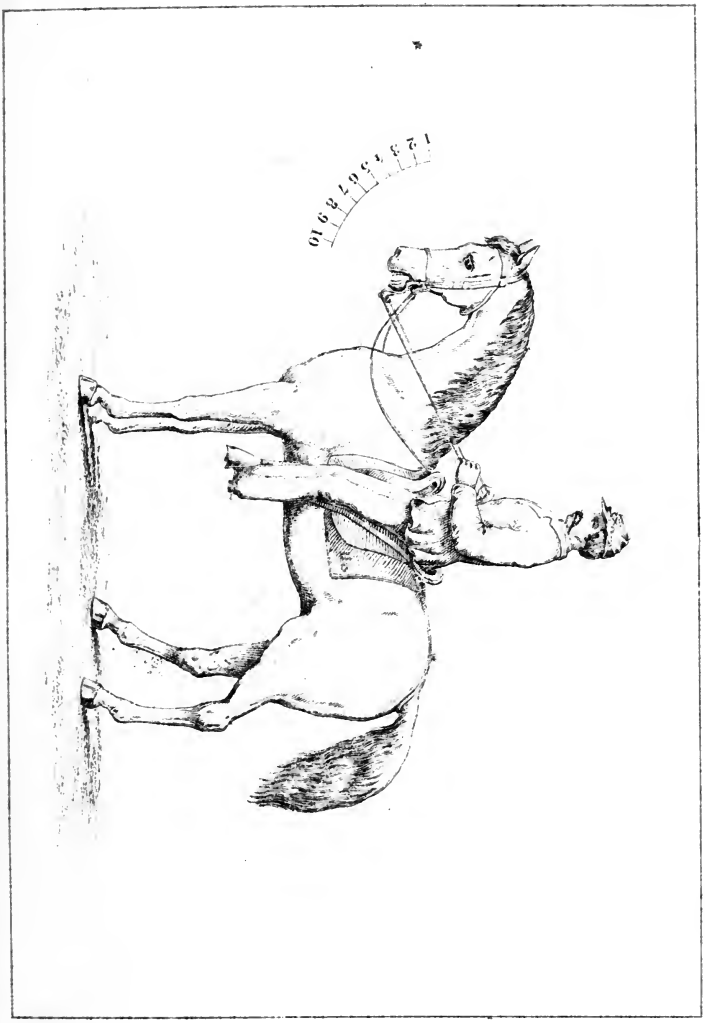


Fig.2.




1 2 3 4 5 6 7 8 9 10

of the snaffle, ease your hand and make much of him.

After practising the lateral bendings with the bit, and the vertical ones with the snaffle, for a few minutes, the instructor will order the men to mount and go through with the same lessons mounted.

To the right, by passing the second finger of the right hand through the bit and snaffle-reins well down; so as to have the reins short on the off side. Then draw them quietly toward you till you get the horse's head completely round to the right, in the same position as in the bend dismounted; being careful not to try to accomplish too much at first. Be very gentle and patient, giving the horse time to comprehend by degrees what is required of him. When the horse champs the bit, make much of him, and allow him to resume his natural position.

When bending the head to the left, pass the right hand over the left one, and, placing the forefinger through the near reins, proceed as before directed.

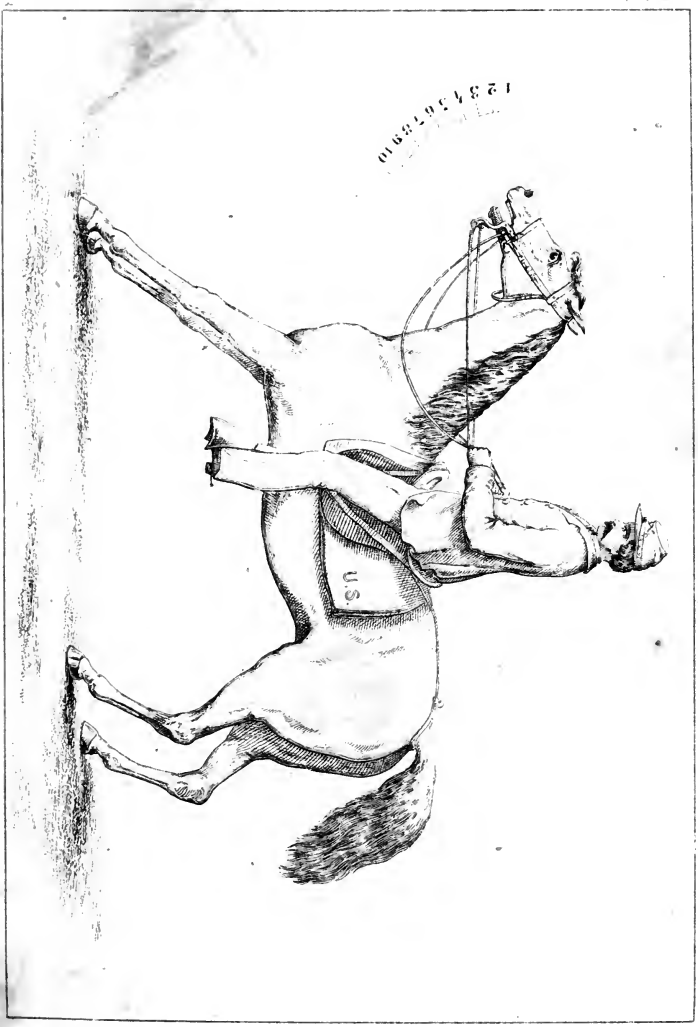
Then, to teach the horse, on the reins being felt, to rein up, arch his neck, and bring his nose into No. 10 (vide plate 4), and there remain steady till he is allowed to get his head away again by the rider loosening the reins. At the word, "*Rein in your Horses*," turn the little finger of the bridle hand toward the horse's head, lowering the hand as much as possible, and keep it there; with the right hand, nails down, take hold of the bit-reins close within the grasp of

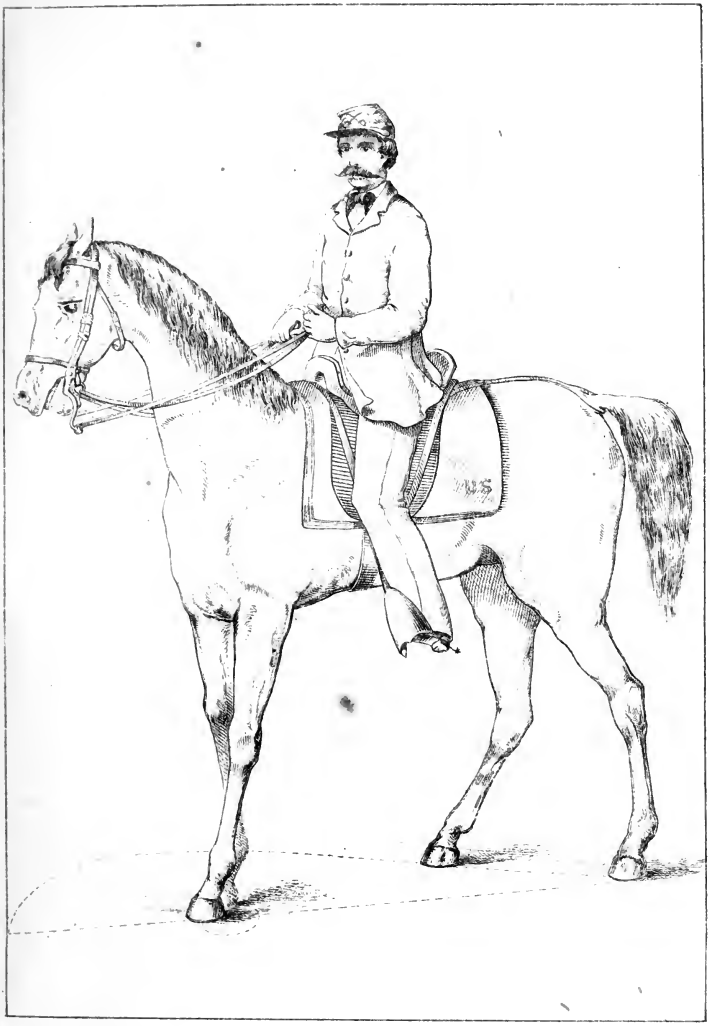
the left hand, and shorten them by degrees, drawing them through the left, which closes on the reins each time they are shortened, to allow of the right hand taking a fresh hold.

When the horse resists much, and holds his nose up (vide plate 5), keep the reins steady; do not shorten nor yet lengthen them; the legs closed to prevent the horse from running back; he will remain, perhaps, a minute or more, with his nose up, and his jaw set against the bit, but will then yield, bring his nose in, and champ the bit; make much of him with the right hand, loosen the reins, and, after a second or two, "rein him in" again.

The horse will thus learn to rein in, and bring his head home, whenever you feel the bit-reins, and this practice gives him confidence; for most young horses are afraid of the bit, and, if frightened at first by any sudden jerk of the reins, will never after go kindly "up to the hand," or let you have the requisite degree of bearing on the bit, which is necessary to forewarn the rider of what the horse is going to do, and whether he requires more collecting (which he does if he bears too heavy on the hand), or more freedom (which he does if he rises too much in his action), but which is also necessary to induce the horse to work boldly and well.

Some horses are so shaped by nature that they overdo the "reining in," and rest the lower jaw on the chest; to counteract this, direct your attention to


C.S.


US

raising his head by the use of the snaffle, as much as possible; whilst with the leg always drive him forward to the hand; this will soon make him carry his head better.

How to teach a horse to obey the pressure of the leg.

On the word of command, "*Circle your horses to the right on the forehand*" (vide plate 6), the horse's head remains straight to the front; apply the left leg well behind the girth, very quietly, and without touching the horse's side with the spur; press against him till he takes a step to the right with his hind-legs, take the leg from him, make much of him; then repeat the same, and get another step from him, and so on till he has turned about; always pausing at the half-turn.

In this Lesson the horse should not rein back, but his fore-legs remain steady, and his hind quarters circle round his fore.

At first the men should be directed to assist themselves when circling to the right on the forehand, by feeling the left rein, and by touching the horse lightly with the whip on the side, and close to where the leg is applied, but very, very gently.

"*Circle to the left on the forehand*" is executed after the same manner, but *vice versa*.

It must be an invariable rule never to hurry a horse in his bending lessons.

By degrees, as the horses improve in this lesson,

and step freely "from" the pressure of the leg; on the word "*Circle your horses to the right on the forehand,*" let the men pass the right hand down, with the middle finger between the off reins, and bend the horse's head a little to the right, so that the horse may see his hind-quarters coming round (vide plate 7); apply the left leg as usual; should the horse not answer to the pressure, use the reins on the same side with the leg, and resume the opposite rein the moment the horse yields. All this must be done very gently and gradually, for if you bend the horse's head round as far as it can go, and attempt thus to circle him the first time, he will resist, finding it too difficult; but if done by degrees, he will soon come to it.

The near fore-leg is the pivot on which the horse circles to the right on the forehand. The off fore-leg is the one he circles on to the left on the forehand.

The leg opposite the one which presses the "hind quarters" to circle round the "fore," must be kept close to the horse, to assist in keeping him in his place, by communicating a forward impulse, whilst the other leg communicates the impulse which makes the horse step from right to left, or left to right; and in order that the pressure of the one shall not counteract the effect of the other, the leg applied to make the horse step to either hand, should be further behind the girth than the leg used to keep him up to the hand.

Both legs should be close to the horse at all times, the pressure on either side being increased as occasion

requires. The outward leg must always assist the inward, and *vice versa;* only never apply it opposite the outward, except you wish to press the horse forward equally with both legs, or when you are working on a straight line.

In passaging, particularly at a trot and a gallop, the inward spur is often used, and sometimes with great good effect, in front of the girth, particularly when a horse will not give his head to the side he is passaging to.

At first, dismounted men are useful with the unsteady horses, by taking hold of the bit-reins on the side opposite to that to which the horse is to step to, and thus assisting the rider, who then only uses the snaffle; but all extraneous assistance should be as much as possible avoided.

After practising the "Bending Lessons" mounted, for a few minutes, the Instructor gives the command "*To the right* (*or To the left*), *March*," and moves the squad round the school two or three times at a "Walk," and at a "Trot," to both hands. Caution the men not to use the bits much the first few days, but the snaffle, and bring the horses to face the bit by degrees. In circle to the right or left at a trot, round the school at a trot-out, walk, change hands, and again trot, and every now and then bring them to a walk, halt them, and make the men bend their horses to the hand they are working to.

Explain to the men that the horse's head and neck

must always be bent the way he is going, and that they must always precede, and prepare the animal by their attitude, for all turns, circles, &c., &c., about to be executed; and whenever they feel the bit-reins, and the horse does not yield to them, let them keep the bridle-hand steady, and play with the snaffle-rein until the horse champs the bit. The snaffle should be continually used to prevent the horse from leaning on the hand.

Finish the lesson by going through the "Bending Lessons" on foot and mounted, and then file home.

During the 1st, 2d, 3d, 4th and 5th Lessons, the horses should be brought out for a quarter of an hour in the afternoon merely bridled, and the men go through the "Dismounted Bending Lessons" with them. This Lesson seems long; but it may be gone through with in three-quarters of an hour, and no Lesson with young horses should exceed that, if possible.

Second Lesson on the Bit.—(Seven days.)

Circling on the Haunches.

The squads are formed in the riding-school as before, and a few minutes devoted to the "Dismounted Bending Lessons;" then mount, and begin by reining the horses in, bending them, and circling them to the right and left on the forehand; this being done once or twice, proceed to the "Circling on the Haunches."

By circling the horse on the forehand, we have taught him on applying the leg to move his haunches to either hand, and as he has thus learnt to obey the leg, we can by making use of it prevent him from moving his hind-legs to the right or left; therefore we shall now teach him to circle on them, which in a few lessons will lead the horse to go completely round on his haunches; and thus in time perform the "Pirouette," the most useful "Air of the Manége" for a cavalry soldier; for, when engaged sword in hand with an enemy, he can turn his horse right, and left, and about, in an instant, and thus gain the advantage over his antagonist.

A cavalry soldier must always bear in mind, that in a contest on horseback, it is not the strongest, but the most accomplished horseman who is likely to be victorious; and a skilful rider will generally carry the day against a man, however powerful and strong, who cannot handle his horse.

On the word of command, "*On the Haunches Right About,*" bend the horse's head a little to the right with the bit; pass the right hand over to the near snaffle-rein; apply the left leg as far behind the girth as possible at first, to keep the haunches steady, but do not use it until the haunches bear against it; on the word "*March,*" make the horse step to the right with his fore-feet, by feeling the left snaffle-rein, bringing both hands a little to the right at the same time, and by applying both legs, the right to keep

the horse from backing, and the left to keep him from circling to the left on the forehand. (Vide plate 8.) A horse circles on the "Haunches" to the right on the right hind-leg, and to the left on the left hind-leg. It should be impressed upon the men, that the right hand is used with the left snaffle-rein to assist the horse, and that, in the beginning, it is very necessary. By careful and progressive management the results will soon be obtained; at the start, the horse should be allowed to rest after executing two or three steps well, and be patted and made much of; if the haunches are thrown out, they must be brought back again by the outward leg, and, thus gradually led on, the horse will learn to go about to both hands on his haunches, without touching the ground with his fore-feet.

Go through the "Trotting Lesson" as laid down, halting now and then to circle to the right and left on the "Haunches," and before dismissing the squad, repeat the "Bending Lessons" on foot and mounted, as at the commencement of this Lesson.

Third Lesson.—(Seven days).

The use of the Spur. Reining Back.

Begin by circling them on the forehand and haunches, then "Rein in your Horses," and "Spur."

The Spur has till now only been used to inflict punishment when a horse refused to obey the press-

and [illegible]

We have [illegible]
on the straight line, [illegible]
the use of the spur into [illegible]
power, on the first application of the [illegible]
instead of raising his forehand, and bring[illegible]
haunches under him, thus concentrating his strength,
would turn his haunches in or out, and avoid the
necessity of bringing them under him.

But what is of still greater importance is, that

es,
forward
, that he would
of your hands; your ob-
eated in the beginning; and
ng burst from your control on the first
ion of the spur, by throwing his weight forward, would ever after try to do the same.

The spur must, therefore, be applied with caution and delicacy.

The rider by closing his legs to the horse brings

the rowels quite close to his sides; so that on the word "*Spur*" (given in a quiet voice), he merely touches his horse's sides, retaining at the same time a steady feeling of the bit reins, so as to present an opposition equal to the impulse communicated by the spur.

Then make much of the horses and quiet them, taking care to square them, should they have stepped to either side with their hind-legs.

When the spur is applied on the move, halt them to quiet them.

You increase by degrees the use of the spur, until the horse will stand its application without throwing any weight on the hand, without increasing his pace, or without moving, if applied when standing still.

If the horse kicks at the spur, it is a sign that his weight is too much forward; if he rises or capers, his weight is too much on the haunches. The rider's mind must, therefore, be directed to keeping the weight between the two, and when it is there his horse is properly balanced.

This lesson, if well carried out, has a moral effect on the horse, which accelerates its results.

If the impulse given by the leg or spur is always controlled by the hand, the pain the animal suffers is at all times in proportion to the resistance he offers; his instinct will soon teach him, that he can diminish and even avoid it, by yielding at once to what is required of him; he will not only submit, but soon anticipate our wishes.

Go through with the "Trotting Lesson," "Walk," and every now and then, halt, and "Spur." Then bring the squad "to the right" or "to the left," halt and begin the

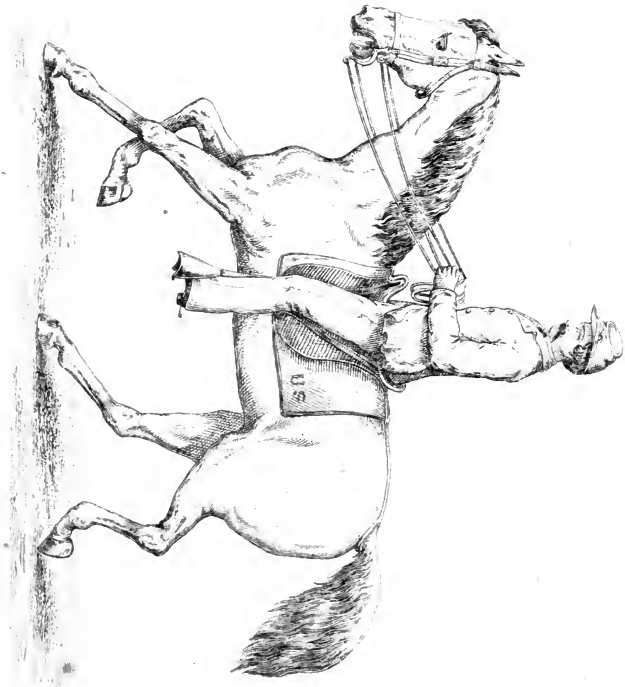
Reining Back.

The great use of reining back has never been properly understood, and consequently not properly practised.

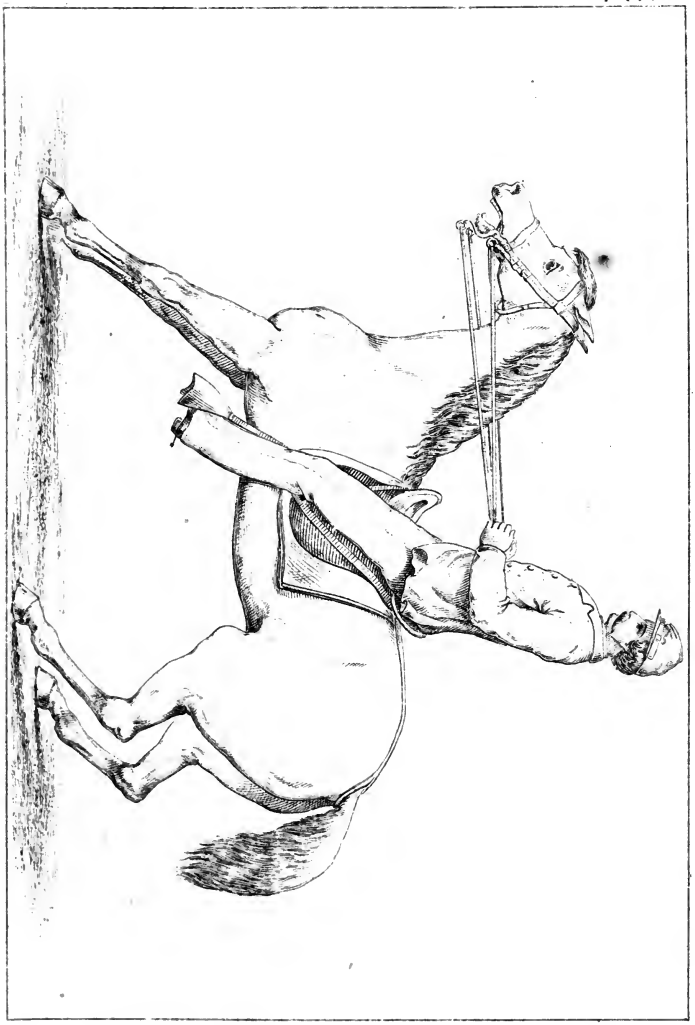
It should not be brought into play until the horse is well bent in the neck and ribs, and obeys the pressure of the leg; during the reining back, the horse must be well in hand, and well balanced; he can then make an equal use of all four legs, and raise them equally from the ground. Before reining back see that your horse haunches to the right or left, as may be required; then give him his head and make much of him.

It will be sufficient to practise a horse at reining back for eight days to make him do it with the greatest ease. (Vide Plate 9).

At first a few steps backward is all that should be required of the horse, increasing by degrees; if he brings his hind-legs too much under him, ease the hand, and apply both legs to make him regain his balance forward; and, for this reason, always use the leg first, and then feel the reins, because, if you feel the reins first, the horse throws his weight back; and it stands to reason, that the more weight he throws on



PL. 10.



his hind-legs, the less able he is to lift them, which is a necessary preliminary to stepping back; therefore, be particularly attentive in preserving the horse's balance, and, if he sticks his nose out, and hugs his tail, with his weight thrown entirely on the haunches (vide plate 10), never attempt to rein him back, until, by applying both legs or spurs, you make him stand up again, and recover his balance; then proceed as before directed.

The horse must never be allowed to hurry or run back out of hand, nor to diverge from a straight line.

The squad must be frequently brought "to the right," or "to the left," when on the sides of the school, and halted near the middle, to practise the Reining Back. Do this during the Walking, Trotting, and Bending Lessons; each man being told to act independent of his dressing, until all the horses rein back well.

Your attention must now be directed to making the men keep their horses well up to the bit, and putting them together with the use of hand and leg; to see that in all turns, circles, &c., &c., the men bend their horses' heads and necks in the new direction before leaving the sides of the school. Endeavor to make them perfect in their bending and trotting lessons; practise the going "about on the haunches" by frequently halting and giving the word, "*On the Haunches About*," "*March*."

The horses having learnt to follow the indication

of the reins, and obey the pressure of the leg, bring them to the half-passage, at first only a few steps being required of them, and take care that the horses' heads and shoulders lead. After four or five lessons at half-passage, proceed to the passage, and see that in this as in the half-passage, the horses' heads and shoulders lead, and that the men lean to the side the horse is passaging to. The inward leg must be freely applied in the half-passage and passage, to keep the horse up to hand; and, when any of the horses rein back, halt the squad and make them dress up.

Finish this lesson with "Circling on the Forehand," "on the Haunches," "Reining in," and "Applying the Spur."

The Horse's Paces — Walk, Trot, and Canter.

In treating here of the horse's paces, no reference is made in these remarks to the manner of using the snaffle laid down in the first part of this book; those two lessons on the snaffle are merely to prepare the horses to enter on their course of instruction.

The Walk.—If a horse walks well, his action is generally good; and by bringing the principles of this system into play, first at a walk, you regulate and improve his other paces.

Before moving forward, the horse should be light in hand, the head brought home, the neck arched, and he should stand evenly on both hind-legs.

Close the legs and communicate a sufficient impulse

to carry him forward, but do not ease the hand at the same time, as laid down in the old system, because if you do, the head and neck may relapse into a position which will defy the control of the hand.

The bit should be to the horse an insurmountable obstacle whenever he attempts to get beyond the position to which he is reined in; he never tries it without suffering, and it is only within its limits that he can find himself at ease.

The rider should, therefore, always have a light feeling of both reins, and when the horse bores on the bit, keep the hand steady, use both legs, which, by bringing his haunches under him, will oblige the horse to take his weight off your hand.

Perfect him in his Walk before you try to do so at a Trot and a Gallop, for this simple reason, that he has three points to rest on when at a walk (as he lifts but one leg at a time), and can easily maintain his balance; and whilst his action is so little brought into play, he is more susceptible of the different impressions we wish to convey; therefore, combine the use of hand and leg to collect him, improve his carriage, and assist in uniting the play of the forehand and haunches.

Monsieur Baucher does not begin the trot till he has perfected the horse at the walk, but Captain Nolan found it answered better in practice to go on with the trotting at the same time; however, get a thing well done at a walk before you try it at a trot.

To keep up the Walk at an even pace, it is neces-

sary that the impulsive and controlling powers emanating from the rider be in perfect harmony.

Suppose you require a power equal to twenty pounds to move the horse forward, of which fifteen pounds for the impulsive power and five pounds to keep the horse reined in; if the legs communicate a greater impulse, without the hand augments the resistance in proportion, it is evident that what is in excess will be thrown on the forehand, and then the horse is no longer light in hand; if, on the contrary, the hand seizes on too large a share (or in other words, is too heavy), it will impede the horse in his forward course, slacken the pace, and interfere with his carriage.

This goes far to show how hand and leg must work together from the beginning, though of course in a different degree, according to the horse.

The Trot.—A horse trots when he raises the "off fore and the near hind leg" or "near fore and off hind" from the ground at the same time. Those paces at which the horse is most easily balanced must precede those in which it is more difficult to retain him in "equilibrium;" therefore, after the "Walk," begin with a steady collected "Trot."

It is necessary, in order to make the horse handy, to exercise him at "Trotting out," but it is not enough that he should trot fast; the quickness of the pace should not detract from his lightness in hand, or the ease with which he should be capable of answering all indications of the hand and leg.

The hand must be constantly at work to retain the head and neck in their proper position, without counteracting the forward impulse communicated by the leg; and thus the horse placed between two powers (hand and leg), which only oppose his bad qualities, will soon develop his good ones, and acquire regularity of pace, increased speed, and that safety which is natural to a horse well balanced and light in hand. In speaking here of increased speed combined with obedience to hand and leg, no reference is made to the speed obtained for trotting matches, which is done by making the horse throw his weight forward and bore on the hand.

A horse out of hand, when trotting fast, seldom moves evenly with his hind-legs; he struggles and drags them after the fore. We should find it very difficult to hold such a horse together; but a horse that had been properly reined in would be easily managed; the hand would bring his head home, whilst the pressure of the legs brought his hind-quarters under him, and thus we should maintain his balance, whilst the limbs in action passed from the bend to the extension before the weight of the body required their support.

Canter.—Is a repetition of bounds, during which the forehand rises first, and higher than the hind-quarters.

The horse being properly placed, light in hand and well balanced, throw his weight from the forehand

to the haunches (by increasing the pressure of the legs and restraining him with the reins), and, according to the hand you wish to strike off to, throw the weight of the horse to the opposite side; that is, if he is to lead off with the off fore, followed by off hind (or canter to the right on the circle), throw the weight to his near side, principally upon the left hind-leg, and thus almost fix it to the ground. This is done by feeling both reins to the left, and closing the right leg; the horse's head remains placed to the right, and the left leg merely prevents him from throwing out his haunches. The horse's off legs are thus at liberty, and the forward impulse obliges him to use them; at least he could not do otherwise without difficulty.

When speaking of feeling both reins to the left, the horse's head bent to the right, it is not to turn the horse's head to the left, but to bring his weight to the near side.

A horse may canter false, disunited with the fore or disunited with the hind legs.

Cantering to the right on a circle:

1. If the horse leads with his left fore followed by his left hind leg, he is cantering false.

2. He is "disunited with the fore," if leading with the left fore followed by the right hind leg.

3. And "disunited with the hind-legs," if leading with the right fore the right hind leg remains further back than the left one.

In these three cases, the horse when he struck off, was not properly placed and well balanced.

In the first instance, he could only have succeeded in striking off to the left by first throwing his weight on to the right legs; to rectify this, feel both reins to the left (horse's head remains placed to the right), to throw the weight to the horse's left side, and, at the same time, close the left leg to bring his haunches in.

In the second instance, when the horse struck off, too much weight was thrown on the right fore-leg; to rectify this, throw the weight of the horse from the forehand to the haunches (by restraining him with the reins), at the same time, feel both reins to the left to relieve the weight from the right fore-leg, and close the right leg to keep the horse's haunches steady.

In the third instance, when the horse struck off, too much weight was thrown on the right hind-leg, to rectify this, throw the weight of the horse from the haunches to the forehand (by the pressure of the legs), close the left leg more than the right, and at the same time keep the forehand steady with the reins.

In these instances, take a good hold of your horse's head, though without allowing him to bore on your hand; otherwise the leg only communicates a forward impulse, and thus the effect on the hind-quarter is lost.

Always place your horse properly and have him well balanced before you strike him off.

Teach him to strike off to the right, on the circle first, then on the straight line.

Then teach him the same to the left; and after that, try him at changing leg.

A horse cantering on a straight line, light in hand and well balanced, is made to change leg in the same way that he is made to strike off to either hand from a walk. Violent effects of force should be avoided, which would bewilder the horse and destroy his lightness. "It must be remembered, that this lightness, which should precede all changes of pace and direction, and make every movement easy, graceful and inevitable, is the important condition to be sought after before every thing else."

If a horse is so far broken in, so far under control of hand and leg, as to be unable to do any thing unless you wish it, all his capabilities are at your disposal; you can throw the weight on each limb in succession, and change leg at every stride.

The great secret is therefore this; "take the weight off the legs you wish the horse to lead with." This is the only one of the many different ways laid down which is founded on principle and common sense. Try it yourself, go down on all fours, throw your weight on the left hand and leg, then try to move forward, and see whether it be not absolutely necessary to do so with the right hand and leg.

How to work a horse to the right has been here described; the means employed to the left are the same, though of course reversed.

In working on a straight line, the horse's head remains placed to the front, and the rider will bear his bridle-hand to the "right" or "left" and press the opposite leg, according to the hand he wishes to strike his horse off to; and he must carefully avoid throwing his horse's forehand roughly to either side.

Fourth Lesson.—(Five days.)

Circling on the Forehand and Haunches to both Hands.

At this stage of the proceedings, when circling on the forehand, stop the horse with the inward leg and outward rein, at each step; make a pause; feel both reins, close both legs, and press him up to the hand; ease the rein and leg, take another step with the haunches, stop him again, "Rein him In," and close your legs. This is very useful, it prevents the horse from getting into a habit of running around with his haunches, it makes him obedient, as it teaches him not to yield to habit, but to trust to the rider's hand and leg alone for guidance; and it accustoms him to collect himself at all times, and thus he is always ready.

To this it is particularly desired to draw the attention, as it is attended with many good results; for

hereafter every position the horse is placed in, and every impulse communicated by the rider, will be followed by a voluntary attempt on the horse's part to collect himself, in which he can be maintained and confirmed by the least possible assistance from the rider.

It is unnecessary to enlarge on the great advantages thus derived from this simple lesson.

Before putting the squad in motion, give the word, "*Rein in your Horses.*" Caution the men to close their legs to the horse's sides, and to bring the spurs as close as possible without touching them. Give the word "*Spur*;" the left hand is held steadily down and the spur applied very gently at first; the horse should not move from his ground, but merely arch his neck. This must be repeated two or three times, always quieting the horse after the spur has been given.

Repeat this as well as the above at intervals during the lesson.

The "Reining Back" is now to be practised often, bringing the squad "to the right" or "to the left," moving nearly across the school and halting to rein back to the track. Be careful that the men apply the legs first, and then feel the reins, to make the horse step back. See that they sit upright in their saddles; do not hurry, and be satisfied with one step at a time.

In this lesson, practise "Circling on the Haunches" to both hands, and canter a few turns on the circle to right; perfect the horses at their "Trotting Lesson,"

"Half-Passage," "Passage," and end the lesson as it was commenced, by Circling on the Forehand, &c. Before filing off, go through with the Bending Lessons on foot.

Fifth Lesson.—(Seven days.)

On the Haunches About.

Go through with "Lesson No. 4," and then proceed to make use of the "Spur" on the move.

The squad being at a walk, the horses are brought to bear the application of the spur without breaking from the walk, or throwing their haunches "in" or "out." After applying the spur, if the horses get unsteady, halt and quiet them. "Reining Back" must now be practised as much as possible.

Halt the squad on the side of the school frequently, and give the word, "*On the Haunches About.*" (Vide plate 11.) At this caution throw the horse's weight from the forehand to the haunches, and feel the outward snaffle-rein with the right hand (when working to the right, passing the hand over to it); horses' heads bent to where they are to turn to. (See Instructions for Circling on the Haunches.)

On the word "*March,*" bring both hands inward, applying the outward leg to turn the horse round, at the same time raising the fore-feet from the ground, by a feeling of both reins, and a pressure of both legs; the outward snaffle-rein assisting in keeping the

haunches steady; and the horse, turning on the hind leg on that side to which he goes about. When round, the men will resume the position of their hands and legs. The horses should be squared, quieted, and made much of before they are put about again.

After the trotting and bending lessons, practice the horses at cantering on the circle, and to both hands, always striking them off from a walk, frequently bring them to a walk, without allowing them to fall first into a trot, and always bring them to a walk for the changes; on no account let the leading files hurry. Practise "Reining Back," and finish with the "Bending Lessons" (both for the neck and loins), as usual.

Sixth Lesson.—(Seven Days.)

Going About on the Forehand.

Go through with "Lessons Nos. 4 and 5," and after you have practised "On the Haunches About," halt the squad on the side of the school, and give the word, "*On the Forehand About;*" horses' heads remain bent inward, but the reins must both be equally felt outward, to throw the weight to that side (for the horses turn on their outward fore-leg), close the inward leg slightly, and in front of the girths, to dispose the horse to raise his inward fore-leg. On the word "March," feel the outward rein, and apply firmly the outward leg, the inward one keeping the horse up to the hand, and preventing him from reining back.

US

The horses should be able to do these "demi-Pirouettes renversées" easily, from being accustomed to circle daily on the forehand; and this way of throwing the horse about is as useful to a soldier in hand-to-hand conflict as the going about on the haunches.

When a horse makes a complete circle in turning on one of his hind-legs, it is a "Pirouette." (Vide plate No. 12.) "On the Haunches About," or a half-circle on one of his hind-legs, is a "demi-Pirouette;" both of these are made on the hind-leg, as a pivot, on the side to which you circle the forehand. When he makes a complete circle in turning on one of his fore-legs, it is a "Pirouette renversée;" "On the Forehand About," or a half-circle on one of his fore-legs, is a "demi-Pirouette renversée;" in these instances it is the fore-leg on the side opposed to that to which the haunches circle, that is the pivot round which the other three legs turn.

Practise "Reining Back," the "Passage" to both hands, and "Cantering" on the circle, but, as in the preceding lesson, bring them to a walk for the changes. Finish with the usual "Bending Lessons."

Seventh Lesson.—(Fourteen Days.)

Perfecting the Horses in the Preceding Lessons.

In the last fourteen days, you perfect the horses in all their preceding lessons, and bring them to work steadily and well at a canter, including "changes of

leg," "half-passage," accustoming them to "sights and sounds," &c., &c.

Be careful to shorten the walking and trotting lessons in proportion as you increase the cantering. Trot for a few minutes; then the Bending Lessons, short but not hurried; and at once to the Cantering, which is now the chief object.

Of course, it is unnecessary to remind the Instructor, that "reining back" and the "use of the spur," as well as going about on the "forehand" and "haunches," should be practised, as opportunity offers, during the whole lesson.

When cantering, never cease making the men work to collect the pace; the more collected it is, the better. The "leading files," are the men to look to. Never keep a man at the head of a squad, who cannot collect his horse to any pace required of him; it makes the greatest difference in the bringing on of the horses.

Look to the position of the men's hands, and their seats on horseback, get their legs close, and prevent them from sticking out stiffly and away from the horse's sides, which is a great though a very common fault, elbows back, hands low, the lower the better, and close to the body, heads up, and heels down; all this contributes greatly to assist the horse in his work.

Practise the sabre exercise (attack and defence), first at a walk, until the horses are steady; and when doing it at a canter, if any of them show symptoms

of fear, the men should return to "guard" immediately, quiet them, and try it again.

On the fourth day, if the horses get on well at changing leg, the half-passage is to be practised at a canter, to both hands; but this must be done carefully, the horses well led off with the inward rein, the outward leg applied well behind the girth, and the inward leg used to make them gain ground to the front. The men are very apt to use the outward leg too much, and thus bring their horses' hind-quarters so far in that instead of the head and neck leading, the haunches lead.

This being quite an unnatural performance and a painful one to require of the animal, he is very apt to turn restive and stop. The Instructor must be keenly alive to this fault, and immediately order the horse to be led off with the "inward rein" and "inward leg," to place him in his proper position, with head and neck leading.

To change leg at "half-passage" at a canter, bring the horse's back square on the track, and do not let the men change the position of the horse's head until the haunches are squared on the track; otherwise the horses will get into a trick of changing too soon.

Immediately after the "half-passage," the word "*In circle*" is given, and the horses are kept on the circle until they all canter true.

In dividing the work to be gone through into lessons, particularizing what is to be done each day in

succession, this course of instruction is based upon what is required for horses in general. Much is left to the judgment of the Instructor, who must vary the application of some lessons, according to the disposition and temper of the horses. One may require to have more perseverance used in his bending lessons; another in reining back; a third, sluggish and lazy, may require the use of the spur before the time laid down. For this no rule can be laid down, and it must be left to the Instructor; but for all that, the time given is sufficient to bring any horse under control that has not been thoroughly spoiled by previous mismanagement; though it will depend upon the rider, how far the horse is brought on within that time.

A SHORT EXPLANATION OF THIS SYSTEM IN QUESTIONS AND ANSWERS, FOR THE INSTRUCTION OF NON-COMMISSIONED OFFICERS AND MEN.

1. *To break in a horse, how do you begin?*

With the head and neck.

2. *Why?*

Because the head and neck should precede or begin every movement of the horse.

3. *How do you set about it?*

By teaching the horse to obey the feeling of the reins.

4. *Do you do this on foot or on horseback?*

I begin with the bending lessons on foot, and thus prepare the horse to obey the hand when mounted.

5. *What follows?*

Teaching the horse to obey the pressure of the leg.

6. *How is this done?*

By circling him on the forehand and haunches.

7. *Is the horse then sufficiently broken in?*

No. For as yet I have only reduced separately to obedience, the head and neck, the shoulders and the haunches, one after the other.

8. *To derive any great advantage from these several separate acts of obedience on the part of the horse, what must you do?*

I must know how to combine them, and exact obedience from all collectively.

9. *But how can you do this?*

I can bring the horse's head home (because he has already been taught to rein in).

I can keep his hind-quarters on a straight line (for by circling on the forehand, the horse has learnt to step to the right or left, *from* the pressure of the leg).

I can move his forehand (from having circled on the haunches).

I therefore now proceed to rein back, and bring his loins into play.

10. *Will "reining back" alone, then, combine the play of forehand and haunches?*

Not thoroughly, without the use of the spur.

11. *Then in what way does the spur assist?*

By the use of the spur I oblige the horse to bring his head and neck, shoulders, loins and haunches, all

into play at the same time; and by degrees I exact obedience from them collectively.

12. *Explain how this is done.*

I keep the horse at a walk on the straight line, his head reined in, and approaching the spur close to his sides, touch him lightly at first. This gives the horse a forward impulse, which I quietly control by keeping my hand steady, while the horse's hind-legs, which he brought under him to spring forward, are suddenly kept there by the opposition of my hand. I then make much of him and caress him, ease my hand, letting him continue to walk on quietly, till, by repeating this lesson, at the slightest pressure of my legs he brings his haunches under him, and arches his neck, and is ready to spring forward, to rein back, or turn to either hand.

13. *But suppose, when you stick the spurs into him, he throws up his head, and dashes off with you?*

This could not happen to me, because I should never communicate an impulse with the leg which I could not control with the hand. I begin by touching his sides so lightly, and taking it so coolly, neither moving hand nor leg, that the horse is never alarmed, thinks nothing of it at first, and thus I go on, gradually increasing the dose, till he takes as much as is "*necessary*," and "*cannot help himself*."

14. *When do you know that the horse has taken as much as is "necessary?"*

When I feel the horse so buoyant and light under

me that I can make him spring forward, rein back, or turn to any side with perfect ease.

15. *And how is it that "he cannot help himself."*

Because I have made myself master, by degrees, of all his strong places, being careful to attack them one by one, and never to attempt No. 2 till I was in full possession of No. 1.

16. *Then, according to your showing, you first make yourself master of the forehand, then of the haunches, and then you combine the play of both by "reining back," and using the spur. Do you now consider yourself master of your horse?"*

Yes, I do.

17. *When you bend your horse to the right and left, whether on foot or mounted, is it sufficient that he should champ the bit?*

Not quite, he should open his mouth and take no hold of it.

18. *Do you continue these bending lessons long?*

Until the horse yields and opens his mouth at the slightest feeling of the reins.

19. *In "reining back," which comes first, "the pressure of the legs," or "the feeling of the reins?"*

First, the pressure of the legs, and then the feeling of the reins.

20. *Why?*

Because the support (the hind-leg) must be displaced before the weight is thrown on it. If the reins are felt first, the whole weight of the horse is thrown

on his hind-legs; and how can he then lift them, and step back. If he succeeds in lifting one leg, it is with a great effort, and he will *fall back* on it rather than step back, and thus injure his houghs, if *forced* to repeat it often; whereas, by a pressure of both legs, I make him raise one hind-leg; and at that moment, by feeling both reins, I oblige him to put that foot down, back instead of forward. I do not throw the horse off his balance, and he can continue stepping back, with as little effort as stepping to the front.

21. *Do the hand and leg work separately?*

No, they should always assist each other.

22. *When circling on the forehand do you ever halt the horse?*

Yes. When the leg is applied, the horse moves from it, but when the pressure ceases, the horse should no longer step from it; otherwise, when he once begins passaging, he is not easily stopped; and to prevent a horse getting into this bad habit, as well as to teach him to collect himself, whenever the leg is applied, after each step in circling on the forehand, I stop him by closing the inward leg; and by a pressure of both legs, I collect and press him up to the hand, but I never allow him to hurry.

23. *And now how do you pull up a horse when at full speed?*

By closing both legs, and feeling both reins.

24. *Do you mean to say that you pull up a horse when at speed by "the use of your legs?"*

Yes. The horse is so accustomed at the pressure of the rider's legs to bring his haunches under him, that he does so at speed also, and I seize that moment to keep him there by throwing myself back, feeling both reins at the same time.

25. *If you did not use your legs what would happen?*

If I did not use my legs, but merely pulled at the bridle, the horse would put his head up or down, and though I should by strength of arm pull him up in time, it would be entirely on his forehand, his hind-quarters up, his loins arched, and I should be thrown up and down in the saddle in a very helpless way, and thus quite unfit to act on an emergency, as the horse would be under no control.*

PIAFFER.

For the "Piaffer" to be regular and graceful, the horse's alternate legs (off fore and near hind, and the near fore and off hind) must be raised and brought to the ground together, the intervals of time between each footfall being made as long as possible.

* By the above means we can bring the horse in about two months to be, Generally obedient;—Light in hand;—To carry himself well;—To walk and trot, steadily and quickly, and always in hand;—To rein back freely, and close steadily to either hand;—To canter to both hands and change leg;—To go about on the forehand and haunches (Pirouette);—And thus make him a useful Cavalry horse.

The horse must neither lean on hand or leg, and his balance should be perfect. (Vide plate 13.)

Begin by communication an impulse with the legs, light at first, but often repeated; then let the horse walk on, closing your legs gradually, and exciting him to increase his action; then, then only, feel the reins in concert with the legs, and at the same intervals of time, keeping up an imperceptible incitement, which reacts on the horse, and makes him keep his legs going, though without any regularity or precision. Be satisfied with this at first, and whenever the horse raises his legs, bringing them to the ground again without gaining much ground to the front, halt, and make much of him, and soothe him after the excitement you have caused, by requiring of him that the object of which he does not yet understand.

Once the horse is brought to keep his legs moving, then begin to regulate and increase the interval of time at which he raises them and brings them to the ground.

It is by the pressure of each leg in succession you oblige the horse to remain longer balanced on the opposite side. At the moment the horse is preparing to bring his fore-leg to the ground, close your leg on the same side; if you do this at the proper time, the horse will balance himself slowly from side to side, and raise his legs well off the ground.

By quickening the alternate pressure of your legs, you quicken the "Piaffer;" it therefore depends upon

yourself to regulate the pace; but remember, that the horse must be kept in perfect "equilibrium," and never allowed to lean on hand or leg.

LEAPING, HOW TO BE PRACTISED.

The riding-school is a bad place to teach a young horse to leap. The bar, with its posts, is very apt to frighten the animal, and the use of the whip, often administered to make him go up to the bar, gives the horse a thorough aversion to it.

Take the horses into a field and over a low fence first, or a small ditch, not backward and forward over one and the same thing to disgust them, but over what obstacles are in the way, and then to the stables.

Few horses refuse, if led on by a steady horse, and in this, as in every other lesson, let the increase be made by degrees.

Always leap the horse on the snaffle, and do not be in a hurry.

M. BAUCHER'S AIRS DE MANÉGE.

Translation from Monsieur Baucher's "Méthode d'Equitation," *explaining the following performances* (*called "Baucher's Seize Nouveaux Airs de Manége"*), *as exhibited by him on his horses,* "*Partisan,*" "*Capitaine,*" "*Neptune,*" *and* "*Buridan.*" *They are adapted only for the circus, but they are both extraordinary and interesting, as they show to what extent the system may be carried.*

"Les études premières bien comprises conduisent à l'érudition.
Plus l'esprit a de consistance, plus il a de brillant et de justesse."
(*Passe-temps Equestres.*)

Those who systematically denied the efficacy of my "Méthode," should have also denied its results. But they were obliged to admit, together with the public, that my performance at the "Cirque Olympique" was both new and extraordinary; though one and all attributed the result to different causes, maintaining, of course, that the rider's horsemanship was nothing compared to the sagacity displayed by the horse.

According to some, I was a new Carter, taming my horses by depriving them of rest and nourishment; others would have it that I tied ropes to their legs, suspended them in mid-air, and then made their limbs

play like those of puppets; some, again, supposed that I fascinated them by the power of the eye; and part of the audience, seeing the horses work in time to my friend Monsieur Paul Cuzent's charming music, actually maintained, seriously, that the horses had a capital "ear for music," and that they stopped at once with the clarionets and trombones.

Thus music had more power over the horse than I had—the beast obeyed an "*ut*," or a "*sol*," "*staccato*," but my hands and legs went for nothing!

Could any one imagine such nonsense emanating from *people who actually passed for horsemen!*

I conceive perfectly that they could not at once understand the means employed, because my "Méthode" was new; but, before passing judgment on it in such an extraordinary way, they should, I think, have tried at least to make themselves acquainted with it.

I found the old school of Equitation so limited, and its movements all so much alike, that when you could do one, you could do them all. The rider who, on a straight line, at a walk, trot, and canter, could make the horse work with his hind legs upon a parallel line to its fore, could, of course, work "*Passage Shoulder In*," "*Passage Shoulder Out*," "*Shoulder In*," and perform the "*Voltes Ordinaires*," or "*Renversées*," "*Change of Hand*," &c., &c., &c.

As for the "piaffer," it was supposed that nature alone decided that point.

This long and tedious work had no variety but in

the different names applied to its movements; since it was sufficient to conquer the first difficulty to overcome all the others.

I therefore invented some new "*Airs de Manége*" (movements), the execution of which required the horse to be more supple, better in hand, and to have more finish in his education than was formerly necessary.

With my system, this was easy; and, to convince my adversaries that in my performance at the Circus there was neither *mystery* nor *magic*, I shall explain by what means—purely equestrian—I brought the horses to execute the sixteen "*Airs de Manége*" that appeared so wonderful, and this without the assistance of pillars, cavessons, or whips.

I. *The horse bending and raising one of his fore-legs and holding it up, whilst the remaining three legs are fast to the ground.*

Bend the horse's head slightly to the right, throwing his weight to the left. Close both legs (the left more than the right) to prevent the hand from acting too much on the weight; then, with the same power you employ to keep fast the *part weighted* (namely, with a feeling of both reins and a pressure of the right leg), communicate an impulse to the off fore, sufficient to make him raise and hold it up.

By repeating this exercise a few times, you can make the horse hold up his leg as long as you like.

II. *The horse resting on the fore-legs, whilst the*

hind-legs are alternately raised and balanced one over the other; the hind-leg which is held up moving from left to right without touching the ground, to become in its turn the support, whilst the other hind-leg is raised and executes the same movement.

Circling the haunches to the right and left round the forehand is one of the elementary exercises I have laid down for the instruction of the horse. Make this exercise more complicated by bringing each leg alternately in contact with the horse's side, until you get him to step freely from one hind-leg to the other, without the movement from right to left, and from left to right, exceeding a step each way.

This work improves and sharpens the rider's perception of the use of hand and leg, and prepares the horse to respond to every aid, however slight.

III. *From the slow "piaffer" to the quick "piaffer," and vice versa.*

The slow "piaffer" is obtained by the slow and alternate pressure of the rider's legs. The quick "piaffer" by quickening the alternate pressure of the leg.

Any horse can be brought to "piaffer," both slow and quick; but perfect "tact" is indispensable, for this already ranks amongst "equestrian difficulties."

IV. *To "rein back" with an equal elevation of the alternate fore and hind feet, which are raised and brought to the ground again together; the horse executing this movement with as much freedom and ease*

as if moving forward, and apparently without assistance from the rider.

"Reining back" is nothing new in itself, though it becomes so under the conditions I impose.

It is only by previously making the horse perfectly supple, and by having him well "reined in," that you can suspend the horse's body in such manner, between hand and leg, that the weight be equally divided, and that the legs acquire equal energy and activity; and then the movement is as easy and as graceful as the mere "backing" a horse is painful and destitute of all elegance.

V. *The horse lifts the alternate fore and hind legs, carries them back and then forward again to their former position, to allow of the opposite two being raised and doing the same.*

If the horse is supple and well in hand, this movement is easy; for when the horse is completely subdued, he answers to the lightest aids applied by the rider; and these are intended in this instance to displace barely sufficient weight, and to give just impulse enough to induce the movement of the two alternate legs.

By practice the horse will soon get accustomed to this movement. The animal's intelligence keeps pace with the progress made in his education.

VI. *Trot, dwelling on each stride; the horse having raised his legs, extends them forward, sustaining them for a moment before he brings them to the ground.*

My system is based on principles which reproduce themselves at each simple movement. How much more then are they brought into play in these complicated ones.

If the "equilibrium" is only to be obtained through lightness in hand, in return, no lightness of hand can exist without "equilibrium;" but when these qualities are united, then the horse acquires the facility of extending his trot to the very furthest limits, and thus greatly improves his style of going.

VII. "*Serpentine Trot*," *the horse turning to the right and to the left, returning nearly to the starting point, after taking five or six steps in each direction.*

Practise the horse at bending his head and neck to both hands whilst at a walk, always closing the leg opposite to the side you bend him to, and keeping him well in hand; then practise him at it in the same way at a trot, and you will have no difficulty in executing the serpentine, but unless the above conditions are adhered to, the performance is impossible.

VIII. *To halt the horse on the spot when at a gallop, by the use of the spur.*

The horse having been reduced to perfect obedience, and got well in hand by the use of the spur, he is prepared to be stopped when at a gallop by the above means.

Practise it from a slow gallop at first, and increase by degrees to the greatest speed; the legs preceding the hand will bring the haunches under the horse,

when a sudden feeling of both reins stopping them in that position, immediately arrests the further spring of the horse.

IX. *The horse, without moving off his ground, keeps one of his fore-legs in motion, performing, by the will of the rider, that movement by which he often of his own accord shows his impatience* ("*pawing*").

This is done by the same means employed to make the horse hold up one of his fore-legs, in which case the rider's legs keep up a constant pressure, so that the force employed to make the horse raise his leg, is continued to make him hold it there; whilst in this movement the impulse must be constantly renewed by a succession of slight pressures, in order to keep that leg in motion.

The horse's leg acquires a movement subordinate to that of the rider, and if the leg is applied at the proper moment, it will appear almost as if he moved the animal by mechanism.

X. *Reining back at a trot, the horse working at the same regular pace, the feet coming to the ground at the same steady intervals as when trotting forward.*

To rein back at a trot, the first condition required is perfect regularity of pace, and that the horse shall be as much collected as possible.

The second condition is dependent entirely on the rider.

He must try, by degrees, whilst collecting the horse, to make the resources of the forehand press on those of the haunches, without upsetting the harmony of action which must necessarily exist.

You see, therefore, that by having your horse properly collected, you first get him to "piaffer" on his own ground, and then to "piaffer" reining back; in time, without even the assistance of the reins.

XI. "*Reining back at a canter*," *the pace being the same as when cantering forward, but when the forelegs are raised they are carried back instead of forward, and when brought to the ground, the hind-legs retrograde in the same way.*

The same principles are applicable to this as to the preceding movement; the horse being perfectly collected, his hind-legs are already so near the central point, that by raising the forehand the houghs cannot move otherwise than "up and down."*

A horse of high mettle is easily brought to this work, but it should not be tried with an inferior animal.

XII. *Changing leg when at a canter at each stride.*

This is difficult work, and the horse must have been often practised at changing leg to fit him for it.

Before changing from stride to stride, teach the horse to change at every two strides.

It depends upon the aptitude shown by the horse,

* The horse in raising his hind-legs cannot put them forward, for the forehand is pressing him back.

and above all, on the intelligence of the rider; with this last quality there is no obstacle he cannot surmount.

The horse must keep up the same degree of action, and remain light in hand throughout, if he is to perform with all desirable precision; and the rider must carefully avoid throwing his horse's forehand roughly from side to side, to obtain the changes of leg.

XIII. *Pirouettes renversées on three legs, during which the horse holds up the fore-leg on that side to which he turns.*

"Pirouettes renversées" must be familiar to a horse broken in on my system, and I have shown how to make him hold up one of the fore-legs.

If these movements are well done separately, they are easily combined. In preparing the horse for the "pirouette," prepare him at the same time to raise the fore-leg; once up, throw the weight to the side opposed to that you are going to turn to, by pressing on it with hand and leg; the leg on the side you turn to giving a forward impulse to the horse, to prevent the hand from throwing the horse too much back.

XIV. "*Reining back,*" *pausing at each step, the horse's right leg remaining stretched out and immovable over the ground that the left has passed over, and vice versa.*

This movement depends upon the cleverness of the rider, for it is the result of a combination of aids which cannot be particularized.

Although it is not a graceful movement, the experienced horseman will do well to practise it, to make himself master of all the difficulties of his profession.

XV. *"Piaffer" with a sudden halt on three legs, the fourth remaining raised in the air.*

Here again, as in the pirouettes on three legs, it is by practising separately the piaffer, and the raising one of the fore-legs, that you afterward succeed in combining the two. To accustom the horse to this work, stop him when piaffing, forcing him at the same time to raise one of his fore-legs.

XVI. *Changing leg each stride, and at equal intervals, without the horse moving off his ground.*

This is done in the same way as on the move; but it is much more complicated, as you must communicate an impulse only just sufficient to make the horse change leg, without moving him forward. It requires good management on the part of the rider, and can only be done with a horse thoroughly broken in, and broken in after my fashion.

The above are the new "Airs de Manége," which I amused myself by inventing, and performed often before the public. They appeared so extraordinary, that no one would believe they were brought about by purely equestrian means; and yet they are simple enough, and easily understood by those acquainted with the principles of my "Méthode."

In every one of these movements the precepts of

this work are brought into play. But I repeat, though I have added much that is new and interesting to the art of equitation, I do not pretend to have attained to its furthest limits; and some one may follow me, who, by studying my system and carrying it out with intelligence, may surpass me in my career and add to the results which I have obtained.

ON THE PERFORMANCE OF HORSES AT LIBERTY.

The first time horses were seen to kneel, lie down, sit at table, &c., &c., &c., it created great astonishment; and even now it causes some degree of surprise; and yet there are few persons who could not bring horses to do these things by the following means.

I shall leave out those antics requiring no cleverness in the trainer, no study for the horse, which astonish and amuse the public only because they are ignorant of the means employed. My object is not to treat of what the mountebank does, but merely to detail that work which requires the man to have patience and "tact," and which shows decided intelligence in the horse.

The great point in teaching a horse, is to know, when he refuses to obey, whether he does so from

caprice, obstinacy, vice, or from ignorance, and in this lies the only difficulty.

If the horse does not understand what you want, and you punish him because he does not understand you, will he then understand you better?

The first thing is to teach the horse to know what you want; and you must in various little clever ways try to make him sensible of it, before you attempt to impress it on his memory.

Is it with blows that you will make him sensible of it? Certainly not: but make the object in view as clearly perceptible to his faculties as you possibly can: then, by punishment or caresses, applied at the right moment, impress the movements required on his memory.

The prettiest work for the horse, is that wherein he is almost entirely left to himself, and with this we will begin.

For this sort of training a circus is best; the man is nearer to his horse, and can more easily correct his faults.

We first teach the horse to remain on the track near the boards, at a walk, trot, and gallop, then to leave that track, and turn to the right or left.

Put a surcingle on the horse with a ring in the pad, to tie the snaffle or bit reins to; tie these according to the horse's action and the way he carries his head; then put on a cavesson, with a longe about eleven yards long.

When the horse is brought in, go up to him kindly and give him some sugar, to which accustom him beforehand; hold the line in the left hand, the whip in the right; at first only allow him about six inches of longe, and accustom him to the cracking of the whip; if he does not fly from it, make much of him; place yourself opposite, and about three paces from him, looking at him kindly; horses know perfectly if you are favorably disposed toward them, or otherwise, and they will more readily approach him whose look is kind. You must be equally careful in adapting the inflections of the voice, as circumstances require.

These are by no means unimportant rules; for the greater the command you wish to obtain over the horse, the more must you endeavor to make him understand and interpret your slightest gesture.

From the distance he is at (namely, three yards), make him come to you, calling out in a loud voice, "*à moi*" (here, or come here). He will not understand it the first time; use the whip, touching him up under the girth, till he comes, then soothe him after the punishment administered, pat and speak to him, and give him some sugar; begin again, giving him a little more line, as soon as you know that he will not attempt to rush off; the horse will soon learn to obey the voice; at last let him out to the full extent of the line, slackening it at the word "*à moi*;" if he comes at once, caress him and give him some

sugar, otherwise hold the line steady, stand fast yourself, and touch him up with the whip till he obeys.

It is better to accustom the horse to obey through fear, than through the hope of recompense. He will never forget the causes that brought punishment upon him, and as you have taught him to escape the infliction by coming to you, he will obey willingly and quickly; if, on the contrary, kind means only are used, he might forget them, and play some trick, and then *how* punish him for such a freak? It would be difficult, because the very prank he was playing would make him forget all about the accustomed reward, and he would only come back when he pleased. Thus you would be at his mercy, for he would obey only when he bethought himself of the reward.

You must make him fear and like you at the same time.

The horse should approach when you call, and throwing your body back suddenly, should make him turn in any direction.

Lead him to the boards on the right hand, stand near his shoulder, holding him by the cavesson line, go away from him gradually as soon as he no longer tries to follow you. Hold the butt of the whip to him each time he tries to leave the boards; if he starts off in a trot before you order him, give the word "*Walk*," dwelling on the word.

If a horse is trained by a patient and observing person, the animal's intelligence will keep pace with

his education, and in a few days he will walk on steadily, though the trainer be ten yards off.

To make him trot, lift the hand, show him the whip, and say, "*Trot*," raising the voice, and dwelling on the word; keep him going, and prevent him with the whip from falling again into a walk. If he hurries, shake the line to restrain him; bring him often to a walk, using the word "*Walk*," and slightly shaking the line.

Make him gallop by the same means, as far as the whip goes, but when you say "*Gallop*," let it be with a louder voice than for the trot. It is not the *word*, but the difference of intonation, which makes him obey.

From the "*Gallop*" to the "*Trot*," is the same as from the "*Trot*" to the "*Walk*," lowering the voice and dwelling on the word "*Trot.*"

In addition to the variation in the voice, you must assist the meaning of the words, by moving the body more or less energetically, in proportion to the increase of pace you order.

Thus, walk quicker when he is galloping, slower when he is trotting, and slower still when he is at a walk.

Though you are a good way from the horse, he will nevertheless have his eye upon you, and will follow more easily your movements than the words of command, which he only understands through the various other indications which accompany them.

The horse having been accustomed to approach at the word "*à moi*" (or any other word which you are in the habit of using), you throwing your body back at the same time, he will easily learn to turn across the circus in the same way; give the word "*Turn;*" if he hesitates, use the longe and whip to bring him to you; then lead him across, remaining at his shoulder; after repeating this till he comes to you, walk on with him, to keep him going to the opposite side.

Changes of hand are easier still, for the horse always tries to avoid you. To make him change, get a little in front of him on the side he is going to, and show him the whip.

The mistrust he feels induces him to cut across the circus, changing to the opposite hand; but you must use the line, and the whip if necessary, to make him come to you first, otherwise, instead of changing hand properly, he would finish by twisting round on his haunches.

Caress him and make him understand the way he is to go. In time, and by repeating these movements, he will come to know them perfectly, and will then anticipate your wishes.

This is so true, that I could not blow my nose whilst exercising one of my horses without the movement of my arm bringing him into the school immediately. I had mastered his faculties to such a degree, that all his attention was fixed upon me; and I could make him do all manner of things without opening my

mouth, but merely by moving my head or shoulders, and this so little as to be imperceptible to the spectators.

When the horse does his work well, take off the cavesson; but when he does any thing wrong put it on again. To prevent disobedience, divide the lesson into two parts, working the first part with, and the second part without the cavesson.

To teach a horse to "fetch and carry" requires great patience; but, however small the success at first, do not be discouraged. It is during this interval that the lessons are gradually taking effect on the horse's memory, and if you do not increase his difficulties by undue haste, he will profit by your lessons and come to understand your wishes perfectly.

Leave him in the stable and in his own stall, that he may not fret by thinking of you. Put in a white cloth, some oats, and sugar, go up to his near side, pass your right arm under his head, and make him open his mouth, by pressing the forefinger on his lower jaw; with the left hand put the cloth between his teeth; keep the thumb and forefinger on the upper and lower lip, and each time the horse tries to get rid of what he is holding, press the lips together sharply, and in a quick and marked manner; repeat this a hundred times if necessary, always putting the cloth with the oats and sugar back into his mouth; and, above all, apply the slight punishment of compressing his lips, at the proper moment.

Some time after this tiresome beginning, the teeth will be kept closed a little longer; then caress him with hand and voice.

The oats and sugar impregnated with saliva will make the horse anxious to taste them, and he will rush at the handkerchief when you put it near his lips. Lower it or remove it to get him to follow, and soon, whenever he can see, he will try to get at it.

To make him pick it up off the ground, say, "*à terre*" (on the ground), if he does not take it, try to show him with your hand what is wanted, point out where the handkerchief is; if he will not go to it, the cavesson may be found useful.

Act carefully till you are convinced that it is not ignorance on the horse's part; if, after picking it up once, he was so capricious as to refuse to do it a second time, speak to him with severity, and use the whip, without, however, losing your temper.

You cannot, without punishment, bring even a well-trained horse to passive obedience. It often happened to me, with a clever mare I had, that when I threw the handkerchief to some distance, I could not prevail upon her to pick it up till I threatened her with the whip, then she at once rushed off, and brought it to me.

It is with regret I publish the means of making a horse kneel, limp, lie down, and sit on his haunches, in the position called the "*Cheval Gastronome.*"

This work is degrading to the horse and painful to the trainer, who no longer sees in the poor trembling beast the proud courser full of spirit and energy he took such pleasure in breaking in.

But I have gone so far that, though reluctantly, I must fulfil the task I have imposed upon myself.

To make a horse kneel, tie his pastern joint to his elbow, make fast a longing line to the other pastern joint; have this held tight, and strike that leg with a whip; the instant he raises it from the ground, pull at the longing line to bend the leg. He cannot help himself, but must fall on his knees. Have plenty of saw-dust, or other soft substance, to prevent the horse hurting himself in his fall, or blemishing his knees, and, to make it more safe, wrap something round the knees. Make much of the horse in this position, and let him get up free from all hindrance.

As soon as he does this without difficulty, leave off the use of the longing line to make him bend his leg; and soon after leave both legs at liberty; by striking him on the shins with the whip, he will understand that he is to kneel down.

Once on the knees, bend his head well to the off-side, and, supporting him with the left rein, pull the right rein down against his neck *till* he falls to the near side; once down at full length, make much of him,* and have his head held that he may not get up

* Rarey's system was not known to the public at the time this was written.

too suddenly, or before you wish him to do so. Profit by his present position to make him sit up on his haunches; raise his head and neck gently, and make him put out his fore-legs; have a good hold of the bridoon reins with both hands, standing near his hind-quarters; raise him gradually, and thus you will succeed in a few lessons in making him sit in the position of the "*Cheval Gastronome.*"

Once the horse is accustomed to kneel, by using a whip you can easily make him walk on his knees. Take the weight off the right side by bringing the head and neck to the left, then touching *that* part (from which the weight has been removed) with the whip, put it in motion; when the horse has moved forward on that side, repeat the same on the opposite side, and so on from one leg to the other, till the horse gets quite into the way of it.

To Make a Horse Limp in Imitation of a Lame Horse.

Use the longing-line, strike his leg with the whip and hold it up with the line, and by forcing the horse to move on at the same time, he must always fall on the leg that is at liberty, and after a little practice he will limp at the slightest threat with the whip.

* * * * * * * *

I shall not expatiate further on examples of this sort; what I have described already will prove quite sufficient to try one's patience upon. I should have

abstained from the subject altogether had not many people expressed a desire to become acquainted with the theory for thus showing what an intelligent animal the horse really is—a theory which as yet had never been made public.

Few people take to this sort of work, and yet it is not without merit, when carried so far as to enable us to see into the animal's thoughts, and control his every movement by a mere gesture.

Every trainer of horses should devote himself to it sometimes. It is by no means useless in the profession he follows, and it is an amusing and instructive pastime when not carried too far.

This article will also have this advantage, that it will take from the mountebank the sort of superiority assumed over "school riders," whilst those antics were supposed to have been produced by means almost miraculous or supernatural, whereas they require less science and practice than is necessary to break in a horse in the most commonplace way.

RAREY'S METHOD OF TAMING HORSES.

What is here said of "Rarey's Method of Taming Horses" is taken from "The Art of Taming Horses," by the Hunting Correspondent of the "Illustrated News."

This method is based upon three fundamental principles:

First. That any horse may be taught to do any thing a horse can do, if taught in a proper manner.

Second. That a horse is not conscious of his own strength until he has resisted and conquered a man, and that, by taking advantage of man's reasoning powers, a horse can be handled in such a manner that he shall not find out his strength.

Third. That by enabling a horse to examine every object with which we desire to make him familiar, with the organs naturally used for that purpose, viz.: Seeing, smelling, and feeling, you may take any object around, over, and on him, that does not actually hurt him.

The whole object of this "method" is, to give the horse full confidence in his rider, to make him obedient to his voice and gestures, and to impress the animal with the belief that he could not successfully resist his trainer.

In speaking of gentling unbroken horses, Rarey says: To those who understand the philosophy of horsemanship, the spirited horses are the easiest trained; for when we have a horse that is wild and lively, we can train him to our will in a very short time —for they are generally quick to learn, and always ready to obey. But there is another kind that are of a stubborn or vicious disposition; and although they are not wild, and do not require taming, in the sense it is generally understood, they are just as ignorant as a wild horse, if not more so, and need to be taught just as much: and in order to have them obey quickly, it is very necessary that they should be made to fear their master; for, in order to obtain perfect obedience from any horse, we must first have him fear us, for our motto is, "Fear, love, and obey;" and we must have the fulfilment of the first two before we can expect the latter, for it is by our philosophy of creating fear, love, and confidence, that we govern to our will every kind of horse.

Then, in order to take horses as we find them, of all kinds, and to train them to our liking, we should always take with us, when we go into a stable to train a colt, a long switch whip (whalebone buggy-whips are the best), with a good silk cracker, so as to cut keenly, and make a sharp report. This, if handled with dexterity, and rightly applied, accompanied by a sharp, fierce word, will be sufficient to enliven the spirits of any horse. With this whip in your right

hand, with the lash pointed backward, enter the stable alone, so as to have nothing but yourself to attract his attention. If he is wild, you will soon see him on the opposite side of the stable from you; and now is the time to use a little judgment. I should not require, myself, more than half or three-quarters of an hour to handle any kind of colt, and have him running about the stable after me; though I would advise a new beginner to take more time, and not be in too much of a hurry.

* * * * * *

Accordingly, when you have entered the stable, stand still, and let the horse look at you a minute or two, and as soon as he is settled in one place, approach him slowly, with both arms stationary, your right hand hanging by your side, holding the whip as directed, and the left bent at the elbow, with your hand projecting. As you approach him, go not too much toward his head or croup, so as not to make him move either forward or backward, thus keeping your horse stationary; if he does move a little either backward or forward, step a little to the left or right very cautiously; this will keep him in one place. As you get very near him, draw a little to his shoulder, and stop a few seconds. If you are in his reach he will turn his head, and smell your hand, not that he has any preference for your hand, but because that is projecting, and is the nearest portion of your body to the horse. This all colts will do, and they will smell

your naked hand just as quickly as they will of any thing that you can put in it, and with just as good an effect, however much men have preached the doctrine of taming horses by giving them the scent of articles from the hand. As soon as he touches your hand with his nose, caress him kindly, pat him gently with your hand, and rub your hand on him smoothly the way the hair lies, always using a light soft hand. As you stand by his side, you may find it more convenient to rub his neck or the side of his head, which will answer the same purpose as rubbing his forehead. Favor every inclination of the horse to smell or touch you with his nose. Always follow each touch or communication of this kind with the most tender and affectionate caresses, accompanied with a kind look, and pleasant word of some sort, such as "Ho! my little boy—ho! my little boy!" "Pretty boy!" "Nice lady!" Or something of that kind, constantly repeating the same words, with the same kind, steady tone of voice: for the horse soon learns to read the expression of the face and voice, and will know as well when fear, love, or anger prevails, as you know your own feelings; two of which a good horseman should never feel, fear and anger.

If your horse, instead of being wild, seems to be of a mulish or stubborn disposition; if he lays back his ears as you approach him, or turns up his heels to kick you, he has not that regard or fear of man that he should have, to enable you to handle him quickly

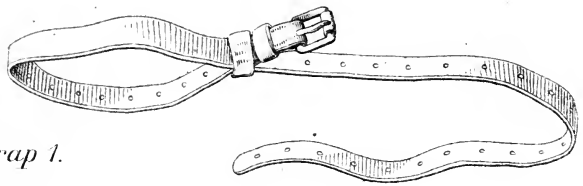
and easily; and it might be well to give him a few sharp cuts with the whip, about the legs, pretty close to the body. It will crack keenly as it plies around his legs, and the crack of the whip will affect him as much as the stroke; besides, one sharp cut about his legs will affect him more than two or three over his back, the skin on the inner part of his legs, or about his flank, being thinner, is more tender than on his back. But do not whip him much—just enough to frighten him; it is not because we want to hurt the horse that we whip him—we only do it to frighten vice and stubbornness out of him. But whatever you do, do quickly, sharply, and with a good deal of fire, but always without anger. If you are going to frighten him at all, you must do it at once. Never go into a pitched battle with your horse, and whip him until he is mad, and will fight you; it would be better not to touch him at all, for you will establish, instead of fear and respect, feelings of resentment, hatred, and ill-will. It will do him no good, but harm, to strike him, unless you can frighten him; and if you can succeed in frightening him, you can whip him without making him mad; for fear and anger never exist together in the horse, and as soon as one is visible, you will find that the other has disappeared. As soon as you have frightened him so that he will stand up straight, and pay some attention to you, approach him again, and caress him a good deal more than you whipped him; thus you will ex-

cite the two controlling passions of his nature, love and fear; he will love and fear you, too; and, as soon as he learns what you require, will obey quickly.

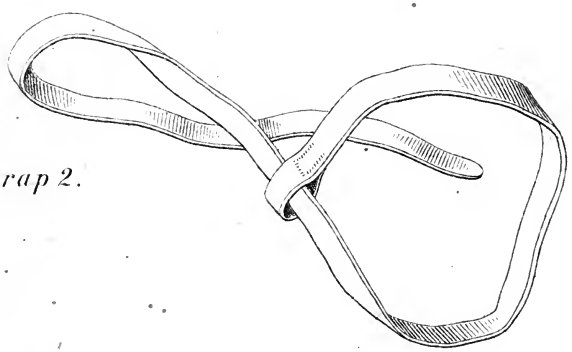
In handling the horse, commence at or near the head, handling the ears, then advance to the neck, then to the sides, &c., until you have handled and patted him from head to tail and felt all his legs. In doing this, you must proceed in a careful and progressive manner, and every time a horse shows any nervousness return immediately to the head, and commence over again, but gaining a little ground each time.

Proceeding in this cautious, careful manner, you can halter the horse and teach him to be lead; but take time, and remember never to enter into a struggle with the horse; if you feel impatient, leave off and begin again another time. It has taken Mr Rarey himself two hours to halter a colt, which shows the great importance of working carefully and patiently, and from the very commencement, never allowing the horse to receive wrong impressions, or gain the slightest advantage over his trainer.

A new beginner must not, however, expect to be entirely successful the first time he undertakes to break a colt, but, by the exercise of good judgment, patience and perseverance, feeling neither fear nor anger, he will eventually attain results fully compensating him for his exertions.



Strap 1.



Strap 2.

Teaching a Horse that Man is his Master.

After having gentled a horse in the preceding manner, so that he can be handled and led, the next step, if he be quiet, is to prevent him from finding out his strength; if he be vicious, is to teach him that it is impossible to contend successfully with his trainer; both of which lessons are taught after the same manner, and as follows:

Having, then, so far soothed a colt, that he will permit you to take up his legs without resistance, take strap 1 (vide plate 14), pass the tongue through the loop under the buckle so as to form a noose, slip it over the near fore-leg and draw it close up to the pastern-joint, then take up the leg as if you were going to shoe him, and passing the strap over the fore-arm, put it through the buckle, and buckle the lower limb as close as you can to the arm without hurting the animal.

In dealing with a vicious horse or a colt that has a trick of striking out with his fore-legs, for protection the trainer can make use of a cart-wheel. The wheel may either be used loose, or the animal may be led up to a cart loaded with hay, when the horse-tamer can work under the cart through one of the wheels, while the horse is nibbling the load. In those instances in which you have had no opportunity of previously taming and soothing a colt, it will frequently take you an hour of quiet, patient, silent perseverance

before he will allow you to buckle up his leg; if he resists, you have nothing for it but patience; you must stroke him, you must fondle him, until he lets you enthral him. Sometimes it may be better to lay the loop open on the ground, and let the horse step into it.

Take care that your buckle is of the very best quality and the leather sound, for, in this lesson, the breaking of any of the straps would give a temporary advantage to the horse, and do harm.

It is better the buckle should be inside the leg if you mean the horse to fall toward you, because then it is easier to unbuckle when he is on the ground.

The near fore-leg being securely strapped, and the horse, if so inclined, secured from biting by a wooden bit, the next step is to make him hop about on three legs.

There is something in this operation of taking up one foot that conquers a horse quicker and better than any thing else you can do to him. There is no process in the world equal to it to break a kicking horse, and without any danger of hurting either himself or you; for in this position you can handle him and work with him either in or out of harness, there being no danger of his kicking you, or of his running fast enough to do harm.

A horse can hop about on three legs for some time, but he must be made to do so very gently, speaking to him very kindly; when he has hopped as long as

you think necessary to tire him, buckle a surcingle on his body tolerably tight. Next you shorten the bridle, which should have a thick, plain snaffle-bit, so that the reins when loose shall come nearly straight; then take strap 2 (vide plate 14), and making a loop, put it round the off fore-leg, and draw the loop tight round the pastern-joint; pass the strap through the belly part of the surcingle (vide plate 15), take a firm hold of it with your right hand, stand close to the horse on the near side behind his shoulders, and with your left hand take hold of the left rein of the bridle. Make the horse hop, by gently pulling him to the near side, or by having him led, and the moment he lifts up his off fore-leg, draw up strap 2, tightly and steadily. The motion will draw up the off fore-leg into the same position as the near one, and the horse will go down on his knees; there hold the strap so firmly that he will not be able to stretch his foot out again.

As soon as the horse recovers from his astonishment at being brought to his knees, he begins to resist; that is, he rears up on his hind-legs, and springs about in a manner that is apparently alarming, and which often requires a good deal of activity in the trainer. (Vide plate 16.)

You must remember that your business is not to set your strength against the horse's strength, but merely to follow him about, holding the strap just tight enough to prevent him from putting out his off fore-leg. As long as you keep close to him and behind

his shoulders, you are in little danger. The bridle must be used in the left hand to guide him, pulling to the right or left, as occasion may require; or by pulling straight the horse may be fatigued, by being forced to walk backward. The trainer is not to fatigue himself more than he can help, but standing upright, simply follow the horse about, guiding him with the bridle. It must be admitted that to do this well requires considerable nerve, coolness, patience, and at times agility; but the danger is more apparent than real, though a high-couraged horse will make a stout fight. When held and guided properly, the horse seldom resists more than ten minutes, at which time, if not before, exhausted by his violent struggles, he sinks forward on his knees, sweating profusely, and with heaving flanks and shaking tail. (Vide plate 17.)

Now is the time to get him into a comfortable position for lying down; if he is still stout, he may be forced by the bit to walk backward. By pushing gently at his shoulder, or by pulling steadily the off rein, you can get him to fall on the side you may wish; but this assistance should be so slight that the horse must not be able to resist it. The horse will often make a final spring when you think he is quite beaten; but, at any rate, at length he slides over, and lies down, panting and exhausted, on his side. Take advantage of the moment to tie up securely the off fore-leg to the surcingle; for, as soon as he recovers his wind, a horse will generally make a second fight,

often more stubborn and fierce than the first, and your object is, to exhaust without hurting him, and to force upon him the conclusion that, by your superior strength you have conquered, and can always conquer him.

When a horse lies down for the second or third time, thoroughly beaten, the time has arrived for teaching him a few more of the practical parts of horse training.

If he has been afraid of a saddle or harness, now is the time to place them upon his back, first allowing him to smell them; now is the time to mount him. If he has heretofore resisted shoeing, now is the time to handle his legs and tap his feet gently with the hand or a hammer. If he has been fidgety about the ears, now is the time to handle them, &c., &c., according to the object to be accomplished; always speaking kindly to him when he submits, but with a voice of authority if he resists.

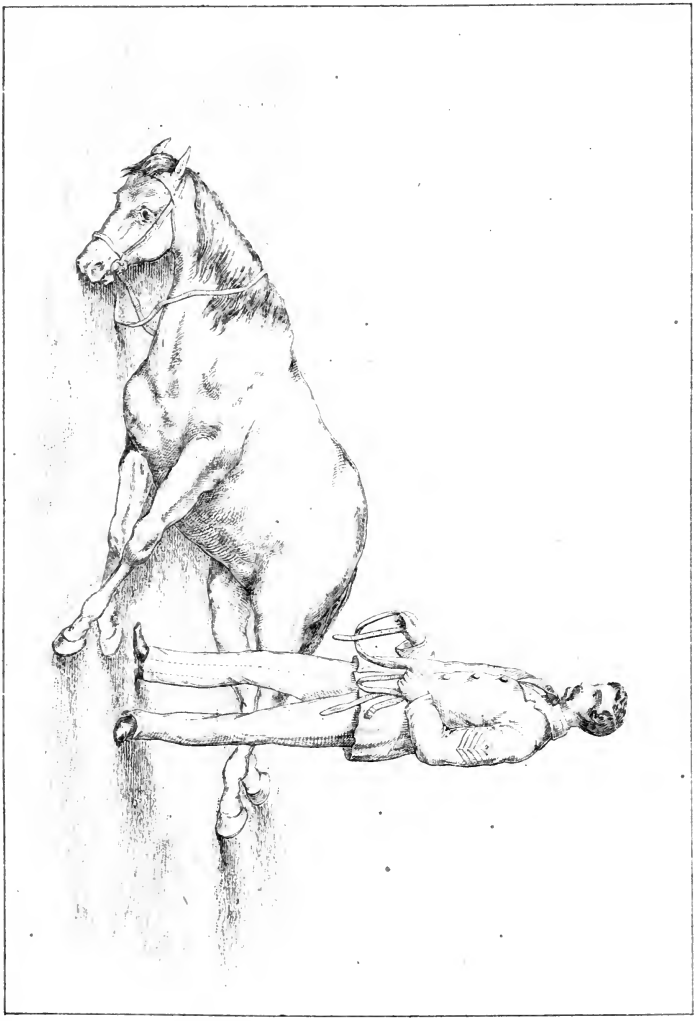
Next, take all the straps off of him, and go through the process of gentling him; walk slowly around him from head to tail and back to his head; scrape the sweat off him with a scraper; rub him down with a wisp; smooth the hair of his legs, and draw the fore ones out straight; handle his head, legs and tail, and gentle every part of him, for, being exhausted and powerless he cannot get away from you, and he has time to find out that you mean him no harm. (Vide plate 18.)

If a horse unstrapped, attempts to rise, you may easily stop him by taking hold of a fore-leg and doubling it back to the strapped position. If by chance he should be too quick, don't resist; it is an essential principle, never to enter into a contest with a horse unless you are certain to be victorious.

In all these operations, you must be calm, and not in a hurry.

Thus, under the "Rarey system," all indications are so direct, that the horse must understand them. You place him in such a position, and under such restraint, that he cannot resist any thing that you choose to do to him; and then you proceed to caress him when he assents, to reprove him when he thinks of resisting; resist with all his legs tied, he cannot. Repeated lessons end by persuading the most vicious horse that it is useless to try to resist, and that acquiescence will be followed by the caresses that horses evidently like.

The average horse may be subdued by the average horseman, and colts usually come within the average; but a fierce, determined, vicious horse requires a man above the average in temper, courage, and activity. It is seldom necessary to lay a colt down more than twice; but it must not be supposed, that a man without experience can, with these straps, manage any horse.



How to Make a Horse Lie Down.

By this process of throwing a horse, you can in a short time teach a horse to lie down. Throw him, handle him all over, then take off the straps and straighten out his legs; rub him lightly about the face and neck with your hand the way the hair lies; handle all his legs, and after he has lain ten or fifteen minutes, let him up again. After resting him a short time, make him lie down as before. Repeat this operation three or four times, which will be sufficient for one lesson. Give him two lessons a day, and when you have given him four lessons, he will lie down by taking hold of one foot. As soon as he is well broken to lie down in this way, tap him on the opposite leg with a stick when you take hold of his foot, and in a few days he will lie down from the mere motion of the stick.

To Accustom a Horse to a Drum.

Place it near him on the ground, and without forcing him, induce him to smell it again and again until he is thoroughly accustomed to it. Then lift it up, and slowly place it on the side of his neck, where he can see it, and tap it gently with a stick or your finger. If he starts, pause and let him carefully examine it. Then recommence, gradually moving it backward until it rests upon his withers, by degrees playing louder and louder, pausing always when he

seems alarmed, to let him look at it and smell it if needful. In a very few minutes you may play with all your force, without his taking any notice. When this practice has been repeated a few times, your horse, however spirited, will rest his nose unmoved on the big drum while the most thundering piece is played.

In the same careful, progressive manner a horse may be accustomed to any noise or sight.

HORSE-SHOEING.

What is here said of "horse-shoeing" is taken from "A Plain Treatise on Horse-Shoeing," by William Miles, Esq.

Before entering upon the subject of shoeing, two things must be noticed, which must not only be believed, but acted upon, if we ever hope to arrive at really good shoeing; the first is, that nature has given, to what horsemen call a good-shaped foot, the form best suited to the horse's wants; and the second is, that the hoof expands, when the horse's weight is thrown upon it, and contracts when it is taken off again; but the mere belief in these things will be of no use unless we make the shoe to fit the foot, and nail it on in such a manner as will allow the hoof to expand and contract; for we might as well not believe at all, as believe a thing right, and not do it.

Nailing an iron shoe to a living horse's foot is a very unnatural thing to do, but, as it must be done, it is our duty to see how we can do it with the least injury to the horse. To show this, it will be supposed directions are being addresed to a young smith, who is about to shoe his first horse.

Preparing the Foot.

You must begin by taking off one of the old shoes, and one only, because the others should always be left on for the horse to rest upon; all horses stand quieter on shod feet than they can on bare ones; and they are less likely to break the crust: many tender-footed horses are in positive agony, when forced to rest on a bare foot while the opposite one is held up to be shod.

First raise all the clenches with the buffer, and, if the shoe will not then come off easily, loosen some of the nails with the punch; but never tear the shoe off by main force; it splits the crust, widens the nail-holes, and destroys the horn.

The shoe being off, you should rasp the edge of the hoof all round, and take out any stubs that may be left in the crust. Then you must pare out the foot; and this requires both care and thought. If the horse has a strong, upright foot, with plenty of horn, you should shorten the toe, lower the heels and crust, and cut out the dead horn from the sole, and also from the corners between the heels and the bars; the best way

of doing this is to pare the bars down nearly even with the sole, and then you can get at the dead horn in the corners more easily. The part of the bar which stands above the sole would have been worn away or broken down, if the shoe had not kept the hoof off the ground; therefore you had better always pare it down; but on no account ever cut any thing away from the sides of the bars, or, what is called, "open out the heels;" and be sure that you never touch the frog with a knife. Now remember, that there are three things which you must never do in paring out a foot: you must never cut the sides of the bars, or open out the heels, or pare the frog; and for the following reasons:

The bars are placed where they are, to keep the heels from closing in upon the frog, and if you thin them by cutting their sides, you weaken them, and they can no longer do it, and the foot begins to contract.

Opening out the heels does exactly the same thing, by weakening the very parts which nature placed there to keep the heels apart; it takes some time to contract a horse's foot so as to lame him, and because the contraction comes on by slow degrees, no one notices it until the horse falls lame, and then every one wonders what can have done it, but very few hit upon the right cause.

The frog is a thick, springy cushion, whose chief use is to protect a very important joint, called the

navicular joint, and it is covered by a thin layer of horn, which keeps in the moisture; and every time you slice off any of the frog you lay bare a part that was never meant to be exposed to the air, and it drys and cracks, and forms rags; and if these rags are cut off at every fresh shoeing, the whole frog becomes as hard and dry as a board; and the horse gets an incurable disease, called "navicular disease;" therefore leave the frog alone, it will never grow too large; for, long before that would happen the outer covering will shell off, and a new horny covering will be found underneath; and as to the rags, leave them alone also, and they will fall off of themselves.

A weak, flat foot will bear very little paring, or rasping; the crust of such a foot is sure to be thin at the toe, and low at the heels, with a thin and weak sole; therefore the less you do to it the better, beyond getting rid of the little dead horn there may be, and making the crust level, where it is to bear upon the shoe; this must be done to all feet, and, as the inner quarter, where there should l no nails, does not wear away as fast as the outer quarter, where the nails are driven, you should place a rasp upon its edge across the foot, to be quite sure that the two sides are level.

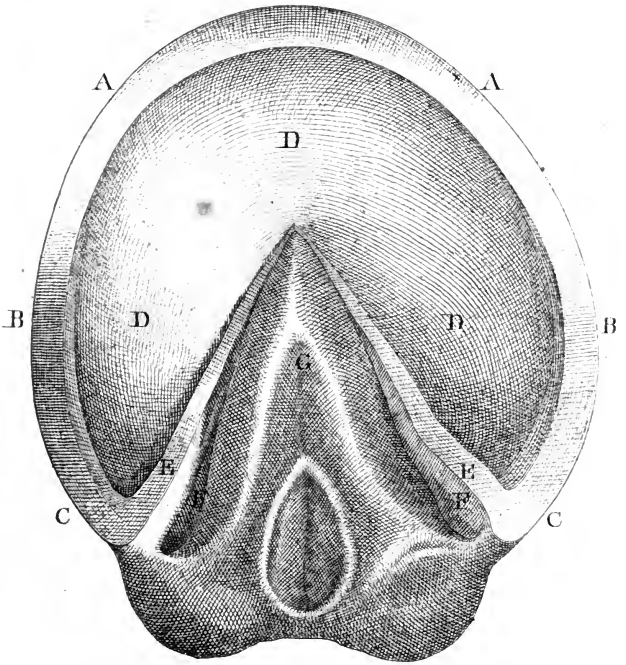
Before you pare out a foot, you should always think of the state of the roads, and, if they are dry, and covered with loose stones, or have been lately repaired, you should take very little off the sole of any foot, because if you thin it, the stones will bruise it,

but, when the season is wet, and the stones worn in, you may pare out the sole of a strong foot, until it will yield to hard pressure from your thumbs; but you must never pare it thin enough to yield to light pressure.

Plate 19 shows a good-shaped near fore-foot, pared out ready for shoeing. The toe reaches from *A* to *A*, the letter *B* shows the middle of each quarter, and *C* marks the heels. You will observe that the crust is thicker on the outer quarter, where the nails should be, than it is on the inner quarter, where a nail must never be driven; and you will also see that the hoof is not a circle, as some suppose, but is straighter on the inside than it is on the outside. *D* marks the sole, *E* shows the upper part of the bars, pared down nearly level with the sole. *F* shows that part of the bars which must never be touched by a knife, *G* marks the frog, and is placed just over the situation of the navicular joint. Examine this frog, it is what every horse's frog should look like, plump, and full, and even, with a broad, shallow cleft, not split through at the back part; and, if you shoe your horses properly, and never pare the frog, it is what their frogs will come to in time.

The Shoe.

Before speaking about the shoe, the names for the upper and under surfaces must be fixed; that part of the shoe that rests upon the ground, will be de-


A
A
D
B
D
D
B
G
E
E
E
E
C
C

nominated the "ground surface;" and the part that goes next to the foot, the "foot surface."

In turning your store shoes "in the rough," you should leave them longer at the heels than smiths generally do; and you should make the web as wide at the heels as it is at the toe, and of the same thickness throughout from the toe back to the heels. The "fuller" should be carried quite round the shoe to the heels, and the fuller-iron should have both sides alike.

Choosing a Shoe.

The first thing to look to in choosing a shoe is the kind of foot you have to deal with. If the foot be a strong, good-shaped one, it will be an easy matter to find a shoe for it; only take care that the web is not too narrow, and that the shoe is not too light. A light shoe is apt to bend before it is half worn out; and the pain caused by the pressure of the bent nails against the tender lining of the hoof, throws the horse down, and most likely breaks his knees. If the foot should be flat, with a weak, brittle crust, you must still choose a stout shoe; for a horse with such a foot could not go at all on a bent shoe; and the shoe must have a wide web, because the sole is sure to be thin, and will need plenty of cover to protect it.

You must also look to the seating; for, if the foot is weak and flat, the shoe must be well seated out to prevent its pressing upon and bruising the sole; but

if the foot is strong and the sole arched, there need not be more seating than will allow the point of a picker to pass freely round between the sole and the shoe; otherwise dirt and small stones will get in, and bruise the sole as much as the shoe would do if it pressed upon it.

Cutting off the Heels.

Having fixed upon a shoe to your mind, begin by cutting off the heels; and you will find a half-round chisel a better tool for the purpose than a straight one, because you should never cut them off square; if you do, you will find it impossible to fit the shoe properly to the heels, and at the same time keep the web as wide at the heels as it is at the toe, for one of the corners of the shoe will be sticking into the frog, while the other stands out beyond the crust; but if you cut them off as shown fig. 1, plate 20, you will have no difficulty in bringing every part of the shoe into its proper place on the foot. Fig. 1 is a shoe turned in the rough; and the dotted lines show the direction in which the heels should be cut off. The side next the frog should be cut off from *C* to *B*, and the outer corner from *A* to *B*, and then the shoe will look like fig. 2, which with a hammering over the beak of the anvil will soon come like fig. 3; you will see that the points marked *A* in fig. 2 have disappeared in fig. 3, and that the parts between *A* and *B*

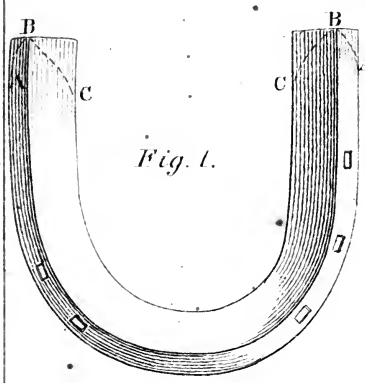


Fig. 1.

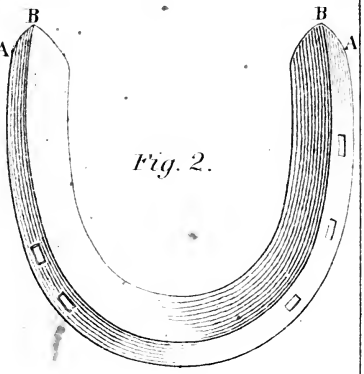


Fig. 2.

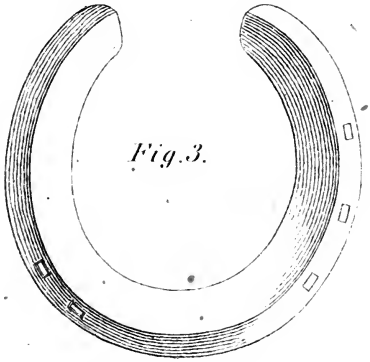


Fig. 3.

on each side, have become a portion of the outer rim of the shoe; whereby the outer rim is lengthened, and the inner rim shortened; and there are no corners left to prevent your fitting the shoe to the exact sweep of the crust at the heels, and you are enabled to keep the web as wide at the heels as it is at the toe. Fig. 3 has been introduced in this place, because it affords the opportunity of explaining the reason for cutting off the heels as directed; but at this stage of the business it is a good plan always to leave the quarters and heels rather straight, and wide apart, until you have fitted the toe; because it is less trouble to bring them in, than it is to open them out, after the front has been fitted.

The Nail Holes.

You must next open the nail-holes; but be sure that they have been stamped so as to pass straight through the shoe, and come out in the flat part of the web, and not partly in the flat and partly in the seating. It is a very bad plan to make them slant inward as most smiths do; for in driving a nail they have first to pitch the point inward, then turn it outward, driving it all the time with the grain of the crust, and at last they bring it out high up in the thinnest part of the hoof, and have the weakest part of the nail for a clinch. Now, instead of all this, if you make the holes straight through the shoe, you

have only to drive the nail straight and it will go through the shoe, across the grain of the crust, and come out low down in the thickest part of the hoof, and give you a strong clinch made out of the shank of the nail, instead of a weak one made out of the point. The advantage of straight-holing is, that you are sure never to prick the foot in driving a nail, and you get a firmer hold for the shoe.

The soundness of a horse's foot, so far as shoeing is concerned, depends more upon the number of nails and where they are placed, than upon any thing else; for if the shoe is ever so badly formed, and the nail-holes rightly placed, very little harm will happen to the foot beyond the loss of a shoe; but if a shoe is of the best possible shape and fitted to the foot in the most perfect manner, unless the nail-holes are placed so that the foot can expand, it must in the end become unsound.

The portions of the hoof that expand the most, are the inner quarter and heel; you must therefore leave those parts free from nails; and the way to do it is, never to stamp more than two holes on the inside of the shoe, one about an inch and a quarter from the centre of the toe, and the other about three-quarters of an inch behind it. It is quite clear that if you nail both sides of a horse's hoof to an iron shoe, the hoof will be held fast and cannot expand; and when the horse's weight forces the bones of the foot into the hoof, the tender lining of the hoof will be squeezed

against the shanks of the nails, and cause pain to the horse at every step he takes. The whole number of the nail-holes should never exceed five; three on the outside, and two on the inside.

Having cut off the heels and opened the nail-holes, you must next turn up a clip at the toe; every shoe should have one at the toe, it keeps the shoe steady, and prevents its being forced back; but you should never put one at the side.

Fitting the Shoe.

You must bear in mind, that "fitting the shoe" means fitting the shoe to the foot, and not fitting the foot to the shoe, as is too often done in many forges.

It is a bad plan to try to fit the whole of the shoe at once; it is much better, and saves a great deal of trouble, to fit the toe first, then the quarters, and lastly the heels; but, before you begin to fit the toe, take a look at the old shoe, and see how much of the toe of it is worn away; because just so much of the new shoe should be turned up from the ground, to remove it out of the line of wear. A new shoe, turned up at the toe, is the same thing to the horse as an old one worn down, but with this great difference to his comfort, that he is easy upon the new one, from the time it is first put on, whereas he was never easy upon the old one, until he had worn away the toe. A strong foot will bear the toe to be turned up a good deal; but a flat foot is always weak at the toe, and will not bear much, still

the shoe should be turned up a little, so as to clear the ground; the horse will travel safer and better for it.

It will now be supposed that you have shortened the toe of the hoof, rasped away the crust, to receive the turned-up shoe, cut a notch for the clip, and turned up the toe of the shoe. You must now put the toe of the shoe in the fire, and make it hot enough to mark the uneven portions of horn, which should be rasped away, until an even bed is left for the shoe to rest upon.

When the toe is once properly fitted, there will be very little trouble in fitting the quarters and heels; you have only to bring them in over the beak of the anvil, until the edge of the shoe ranges with the edge of the hoof back to the furthest point of the heel on each side, and continue the same sweep, until it nearly touches the frog; there must be none of the shoe left sticking out beyond the hoof, either behind or at the sides of the heels.

The part of the foot that needs protection from injury more than any other, is the "navicular joint," which rests upon the frog, about an inch or an inch and a quarter behind its point, and the only way to protect it, is to keep the web of the shoe as wide at the heels as it is at the toe, and to bring in the heels until they nearly touch the frog; by so doing you lessen the opening of the shoe, and the web of one side or the other will strike upon the stones in the

road, and save the frog from coming with full force upon them. But open-heeled shoes leave the frog entirely exposed to very large stones, and cause many a bruise to the navicular joint, which lays the foundation of future incurable lameness.

Another advantage of bringing in the heels, and fitting the shoe close, is the certainty that the horse will not cast his shoe; you leave nothing for stiff ground to lay hold of, and, if you slightly bevel the inside quarter and heel of the shoe, from the foot downward, as is sometimes done to prevent a horse cutting, no ground in the world can pull it off; for the foot, expanding to the weight of the horse, enlarges the hole made by the shoe, and leaves more space for the shoe to come out of, than it made for itself to go in at, but if the shoe projects beyond the hoof at any part, and more particularly at the heels, the foot cannot fill the hole made by the shoe, and stiff clay will cling round the projection, and pull the shoe off.

Having so far finished the shoe, place it on the face of the anvil, with the toe hanging over the side, and see that the foot surface of the quarters and heels are quite level; then make it hot enough to scorch the hoof all round, and form a bed for itself. Without this it would be next to impossible to insure close fitting; for after you have made the foot as level as you can with the rasp, and the shoe as level as you can on the anvil, the chances are very much

against their fitting like two planed boards, as they ought to do; and the quantity of horn to be thus removed is so small as not to be worth thinking about. It is a mistake to suppose that a hot shoe injures the hoof; it does nothing of the kind, and you cannot possibly fit a shoe properly without making it hot. You should not burn a shoe into its place on the foot, before you had taken care to make both the foot and the shoe as level as you could, but when you have done that, the small quantity of burning that is necessary to make them come close together can do no harm. A weak, thin crust will not bear as much heat as a strong one; nevertheless it must be scorched, that you may be sure the shoe fits properly.

When you have cooled the shoe, you should "back-hole" it, that is, make a free opening on the foot surface for the nails to pass through; and mind that, in doing so, you do not make the holes incline inward, but take great care to make them pass straight through the shoe.

Before you "file up" the shoe, hold it firmly in its place on the foot with both hands, and examine carefully whether any light appears between the foot and the shoe; and if you should perceive any, alter the shoe at once, for the crust must bear upon the shoe all round, before you can say that the shoe fits the foot, as it ought to do.

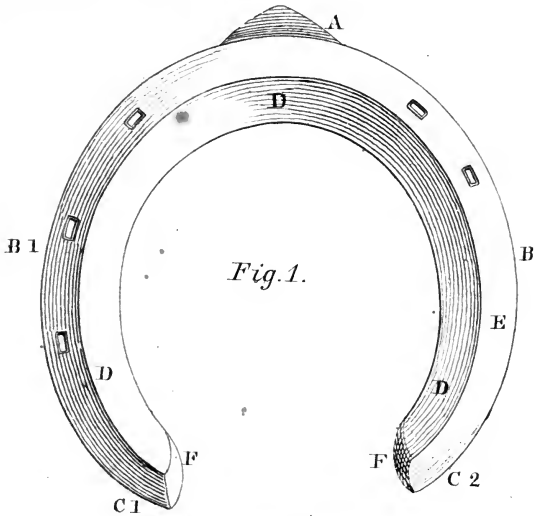


Fig. 1.

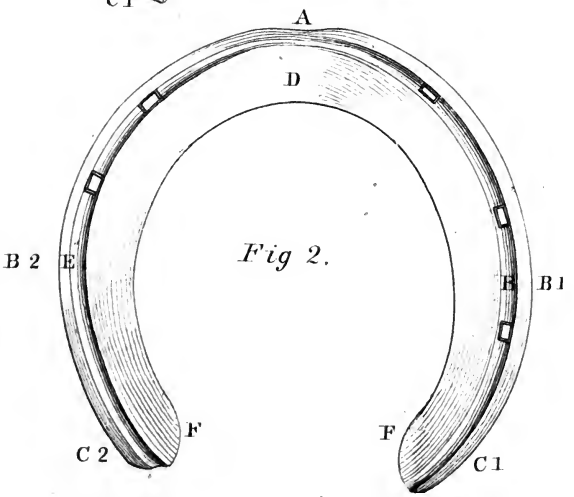


Fig 2.

Filing up the Shoe.

Much time is often wasted in polishing the shoe with the file, before it is nailed on; but all that is really needed is, to remove the burrs about the nail-holes, file off the sharp edges of the shoe, and round the heels, taking care to apply the file hard to that part of both heels which comes next to the frog, so as to slant it from the ground upward from the frog; but you must be careful not to make the ground-surface of the web at the heels narrower in so doing. fig. 1 shows the foot surface, and fig. 2, plate 21, the ground surface of a near fore-shoe.

In fig. 1 *A* is the clip at the toe. *B* 1 the outer quarter. *B* 2 the inner quarter. *C* 1 the outer heel. *C* 2 the inner heel. *D* the seating. *E* the flat surface for the crust to bear upon. *F* the heels bevelled off away from the frog.

In fig. 2 *A* is the toe, turned up out of the line of wear. *B* 1 the outer, and *B* 2 the inner quarter. *C* 1 the outer, and *C* 2 the inner heel. *D* the ground surface of the web, as wide at the heels as it is at the toe. *E* the fuller, carried all round the shoe. *F* the inner quarter, and heel slightly bevelled from the foot to the ground.

Nails.

A few words must be said about the nails, before we come to nailing on the shoe, because the nails in

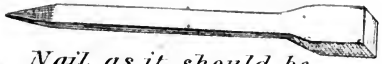
common use are as badly formed as they can well be; their short, wedge-shaped heads, wide at the top and narrow at the bottom, with shanks springing suddenly from the head without any shoulder, and ending in a long, narrow point, are most unsafe to trust a shoe to. The head of such a nail can never perfectly fill a hole in the shoe, for the wide top gets tied either in the fuller, or the upper part of the hole, before the lower part has reached the bottom; and when the shoe is half worn out, the head of the nail is gone, and the shank alone is left in the hole to keep the shoe on. Now the nails should have heads which are straight-sided at the upper part, and gradually die away into the shank at the lower part, so as to form a shoulder which will block the opening made in "back-holing" the shoe, and keep the shoe firmly in its place, until it is quite worn out.

If you compare the two nails (vide plate 22), you will at once see which promises the firmer hold.

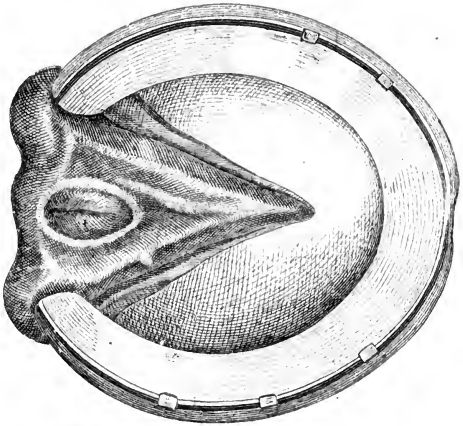
Your nails should be made of the very best nail-rods you can get, and they should not be cooled too quickly, but be left spread about to cool by degrees; the longer, in reason, they are cooling the tougher they will become.

Nailing on the Shoe.

If the nails are of the proper shape, the holes straight through the shoe, and the shoe fits the foot, it requires very little skill to nail it on; only put the



Nail as it should be



Nail as it is

Pl. 22.

point of the nail in the middle of the hole, keep the nail upright, and drive it straight, it must come out in the right place, low down in the crust, without the possibility of wounding the sensitive parts of the foot. The shank of the nail will pass through the substance of the crust, and gain a good, firm hold of it, leaving you the strongest part from which to form a clench. The clenches should be short and broad, and not thinned by rasping away any of their substance, but hammered at once into a notch made in the hoof under each, and the rasp should never be allowed to go over them, after they have been hammered down. You will do good by rasping below the clenches, because you will thereby remove the broken horn that the former nails have destroyed; but on no account ever use the rasp above the clenches; if you do, you will tear off the thin outer covering of the hoof, which is placed there to prevent the escape of the natural moisture and to keep the horn tough, and if you rasp it away you will expose the horn to the air, and it will soon become dry and brittle, and make the hoof difficult to nail to.

Plate 22 shows the ground surface of a near fore-foot, with the shoe nailed on by five nails, and how the shoe should look in its place on the foot.

The Hind-Shoe.

The hind shoe, like the fore-shoe, should be brought in at the heels, and be made to follow the exact shape

of the hoof; but as the weight of the horse falls differently on the hind-feet to what it does on the fore-feet, and as the rider often obliges the horse to stop suddenly and without warning, when he is least prepared to do so, it becomes necessary to guard against strains of the hock and back sinews by raising the heels of the shoe, but this should be done in such a manner as will give both heels an even bearing on the ground. Calkins may be useful to heavy draught-horses, but they are objectionable for riding horses; and turning down the outside heel alone should never be done.

The best plan is to have the last inch and a half toward the heel forged thicker than any other part of the shoe; the heels are then made redhot, and the shoe is put in the vice with the redhot heels projecting, which are beaten down with a hammer, until they are about an inch long, and then the sides are made even, and the foot and ground surfaces level on the anvil.

The toe of the hind-shoe is exposed to great wear, and should be made stout, and thick, and rather pointed, with a small clip in the middle to prevent the shoe from being driven backward; and the back edge of the web should be rounded off, to guard against "overreach." The toe should rest fairly on the ground, to enable the horse to get a good purchase for throwing his weight forward. It is a bad plan to make the toe broad, and to place clips at the side of it.

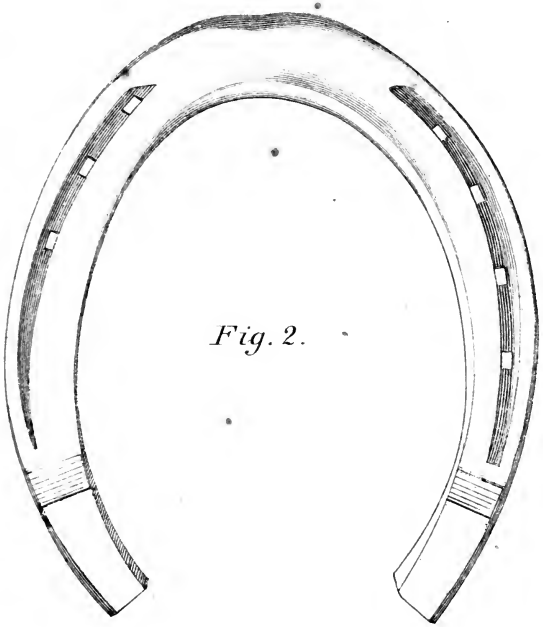


Fig. 2.

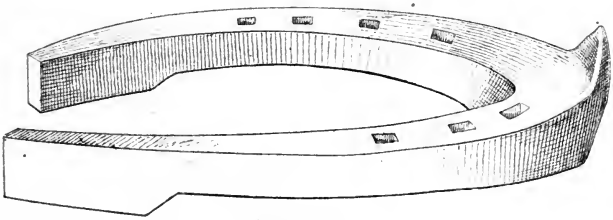


Fig. 1.

The hind-foot expands less than the fore-foot; still you should place the nail-holes so as not to confine the foot. Three nails on each side are generally found sufficient to hold a hind-shoe firmly to the foot. The holes on the inside should be stamped closer together than those on the outside, and they should be placed forward toward the toe, so as to leave the inside quarter and heel free to expand. A small foot may be shod with three nails on the outside and two on the inside; but no foot can ever require more than seven altogether.

Figs. 1 and 2, plate 23, show a near hind-shoe, when the foot is so large as to require seven nail-holes.

Removing.

The time at which a horse's shoes should be removed must depend very much upon circumstances. If a horse wears his shoes out in less than a month, they had better not be removed; and horses with thin, weak horn, which grows slowly, are likewise better left alone between each shoeing, unless their shoes last six or seven weeks, in which case they should be removed once within the time: but horses with strong feet and plenty of horn, that wear their shoes a full month, should have them removed at the end of the first fortnight; and when horses are doing so little work, or wear their shoes so lightly that they last two months, they should be removed every fort-

night, and at the second removal the shoes should be put in the fire and refitted, or the feet will outgrow the shoes, as the horn grows much quicker when a horse is idle than it does when he is in full work.

Having gone carefully through all the circumstances necessary to good shoeing, a recapitulation of the few things which are to be done will be made in the proper order:

Raise the clenches with the buffer.

Have only one foot bare at a time.

Pare out the foot, but leave the frog alone.

Cut off the heels of the shoe, as directed.

Open the nail-holes straight through the shoe.

Form a clip at the toe, and turn up the toe of the shoe.

Heat the shoe and apply it to the foot, to see that it fits properly.

Cool the shoe, "back-hole" it, and file it up.

Nail it on with five nails, coming out low in the crust.

Hammer down the clenches without rasping them, and only rasp the hoof below them.

THE END.

MILITARY AND NAVAL

PUBLICATIONS,

FROM THE PRESS OF

D. VAN NOSTRAND,

192 BROADWAY,

(UP STAIRS,)

NEW YORK.

A large Stock of English, French, and American Military Works, constantly on hand.

Copies of any of these Books sent free by mail on receipt of the Catalogue price.

Scott's Military Dictionary.

Comprising Technical Definitions; Information on Raising and Keeping Troops; Actual Service, including makeshifts and improved materiel, and Law, Government, Regulation, and Administration relating to Land Forces. By Colonel H. L. Scott, Inspector-General U. S. A. 1 vol., large octavo, fully illustrated, half morocco. $5.

"It is a complete Encyclopædia of Military Science."—*Philadelphia Evening Bulletin.*

"We cannot speak too much in legitimate praise of this work."—*National Intelligencer.*

"It should be made a Text-book for the study of every Volunteer."—*Harper's Magazine.*

"We cordially commend it to public favor."—*Washington Globe.*

"This comprehensive and skilfully prepared work supplies a want that has long been felt, and will be peculiarly valuable at this time as a book of reference."—*Boston Commercial Bulletin.*

"The Military Dictionary is splendidly got up in every way, and reflects credit on the publisher. The officers of every company in the service should possess it."—*N. Y. Tablet.*

"The work is more properly a Military Encyclopædia, and is profusely illustrated with engravings. It appears to contain every thing that can be wanted in the shape of information by officers of all grades."—*Philadelphia North American.*

"This book is really an Encyclopædia, both elementary and technical, and as such occupies a gap in military literature which has long been most inconveniently vacant. This book meets a present popular want, and will be secured not only by those embarking in the profession but by a great number of civilians, who are determined to follow the descriptions and to understand the philosophy of the various movements of the campaign. Indeed, no tolerably good library would be complete without the work."—*New York Times.*

"The work has evidently been compiled from a careful consultation of the best authorities, enriched with the results of the experience and personal knowledge of the author."—*N. Y. Daily Tribune.*

"Works like the present are invaluable. The officers of our Volunteer service would all do well to possess themselves of the volume."—*N. Y. Herald.*

New Bayonet Exercise.

A New Manual of the Bayonet, for the Army and Militia of the United States. By Colonel J. C. Kelton, U. S. A. With thirty beautifully-engraved plates. Red cloth. $1.75.

This Manual was prepared for the use of the Corps of Cadets, and has been introduced at the Military Academy with satisfactory results. It is simply the theory of the attack and defence of the sword applied to the bayonet, on the authority of men skilled in the use of arms.

The Manual contains practical lessons in Fencing, and prescribes the defence against Cavalry and the manner of conducting a contest with a Swordsman.

"This work merits a favorable reception at the hands of all military men. It contains all the instruction necessary to enable an officer to drill his men in the use of this weapon. The introduction of the Sabre Bayonet in our Army renders a knowledge of the exercise more imperative."—*New York Times.*

Rifles and Rifle Practice.

An Elementary Treatise on the Theory of Rifle Firing; explaining the causes of Inaccuracy of Fire and the manner of correcting it; with descriptions of the Infantry Rifles of Europe and the United States, their Balls and Cartridges. By Capt. C. M. WILCOX, U. S. A. New edition, with engravings and cuts. Green cloth. $1.75.

"Although eminently a scientific work, special care seems to have been taken to avoid the use of technical terms, and to make the whole subject readily comprehensible to the practical enquirer. It was designed chiefly for the use of Volunteers and Militia; but the War Department has evinced its approval of its merits by ordering from the publisher one thousand copies, for the use of the United States Army."—*Louisville Journal.*

"The book will be found intensely interesting to all who are watching the changes in the art of war arising from the introduction of the new rifled arms. We recommend to our readers to buy the book."—*Military Gazette.*

"A most valuable treatise."—*New York Herald.*

"This book is quite original in its character. That character is completeness. It renders a study of most of the works on the rifle that have been published quite unnecessary. We cordially recommend the book."—*United Service Gazette, London.*

"The work being in all its parts derived from the best sources, is of the highest authority, and will be accepted as the standard on the subject of which it treats."—*New Yorker.*

Army Officer's Pocket Companion.

Principally designed for Staff Officers in the Field. Partly translated from the French of M. DE ROUVRE, Lieutenant-Colonel of the French Staff Corps, with Additions from Standard American, French, and English Authorities. By WM. P. CRAIGHILL, First Lieutenant U. S. Corps of Engineers, Assist. Prof. of Engineering at the U. S. Military Academy, West Point. 1 vol. 18mo. Full roan. $1.50.

"I have carefully examined Capt. CRAIGHILL'S Pocket Companion. I find it one of the very best works of the kind I have ever seen. Any Army or Volunteer officer who will make himself acquainted with the contents of this little book, will seldom be ignorant of his duties in camp or field."

H. W. HALLECK,
Major-General U. S. A.

"I have carefully examined the 'Manual for Staff Officers in the Field.' It is a most invaluable work, admirable in arrangement, perspicuously written, abounding in most useful matters, and such a book as should be the constant pocket companion of every army officer, Regular and Volunteer."

G. W. CULLUM,
Brigadier-General U. S. A.
Chief of General Halleck's Staff,
Chief Engineer Department Mississippi.

"This little volume contains a large amount of indispensable information relating to officers' duties in the siege, camp, and field, and will prove to them a most valuable pocket companion. It is illustrated with plans and drawings."
—*Boston Com. Bulletin.*

Hand-Book of Artillery,

For the Service of the United States Army and Militia. New and revised edition. By Maj. JOSEPH ROBERTS, U. S. A. 1 vol. 18mo, cloth flexible. 75 cents.

"A complete catechism of gun practice, covering the whole ground of this branch of military science, and adapted to militia and volunteer drill, as well as to the regular army. It has the merit of precise detail, even to the technical names of all parts of a gun, and how the smallest operations connected with its use can be best performed. It has evidently been prepared with great care, and with strict scientific accuracy. By the recommendation of a committee appointed by the commanding officer of the Artillery School at Fort Monroe, Va., it has been substituted for 'Burns' Questions and Answers,' an English work which has heretofore been the text-book of instruction in this country." —*New York Century.*

New Infantry Tactics,

For the Instruction, Exercise, and Manœuvres of the Soldier, a Company, Line of Skirmishers, Battalion, Brigade, or Corps d'Armée. By Brig.-Gen. SILAS CASEY, U. S. A. 3 vols. 24mo. Half roan, lithographed plates. $2.50.

VOL. I.—School of the Soldier; School of the Company; Instruction for Skirmishers.

VOL. II.—School of the Battalion.

VOL. III.—Evolutions of a Brigade; Evolutions of a Corps d'Armée.

The manuscript of this new system of Infantry Tactics was carefully examined by General MCCLELLAN, and met with his unqualified approval, which he has since manifested by authorizing General CASEY to adopt it for his entire division. The author has retained much that is valuable contained in the systems of SCOTT and HARDEE, but has made many important changes and additions which experience and the exigencies of the service require. General CASEY'S reputation as an accomplished soldier and skilful tactician is a guarantee that the work he has undertaken has been thoroughly performed.

"These volumes are based on the French *ordonnances* of 1831 and 1845 for the manœuvres of heavy infantry and *chasseurs à pied;* both of these systems have been in use in our service for some years, the former having been translated by Gen. Scott, and the latter by Col. Hardee. After the introduction of the latter drill in our service, in connection with Gen. Scott's Tactics, there arose the necessity of a uniform system for the manœuvres of all the infantry arm of the service. These volumes are the result of the author's endeavor to communicate the instruction, now used and adopted in the army, to achieve this result."—*Boston Journal.*

"Based on the best precedents, adapted to the novel requirements of the art of war, and very full in its instructions, Casey's Tactics will be received as the most useful and most comprehensive work of its kind in our language. From the drill and discipline of the individual soldier, or through all the various combinations, to the manœuvres of a brigade and the evolutions of a Corps D'Armée, the student is advanced by a clear method and steady progress. Numerous cuts, plans, and diagrams illustrate positions and movements, and demonstrate to the eye the exact working out of the individual position, brigading, order of battle, &c., &c. The work is a model of publishing success, being in three neat pocket volumes."—*New Yorker.*

Sword-Play.

THE MILITIAMAN'S MANUAL AND SWORD-PLAY WITHOUT A MASTER.—Rapier and Broad-Sword Exercises copiously Explained and Illustrated; Small-Arm Light Infantry Drill of the United States Army; Infantry Manual of Percussion Muskets; Company Drill of the United States Cavalry. By Major M. W. BERRIMAN, engaged for the last thirty years in the practical instruction of Military Students. Second edition. 1 vol. 12mo, red cloth. $1.

"Captain Berriman has had thirty years' experience in teaching military students, and his work is written in a simple, clear, and soldierly style. It is illustrated with twelve plates, and is one of the cheapest and most complete works of the kind published in this country."—*New York World.*

"This work will be found very valuable to all persons seeking military instruction; but it recommends itself most especially to officers, and those who have to use the sword or sabre. We believe it is the only work on the use of the sword published in this country."—*New York Tablet.*

"It is a work of obvious merit and value."—*Boston Traveller.*

Military Law and Courts Martial,

By Capt. S. V. BENET, U. S. Ordnance, Asst. Prof. of Ethics in the United States Military Academy. 1 vol. 8vo. Law sheep. *In Press.*

The Artilleriſt's Manual:

Compiled from various Sources, and adapted to the Service of the United States. Profusely illustrated with woodcuts and engravings on stone. Second edition, revised and corrected, with valuable additions, *in press.* By Capt. JOHN GIBBON, U. S. Army. 1 vol. 8vo, half roan, $5; half russia, $6.

This book is now considered the standard authority for that particular branch of the Service in the United States Army. The War Department, at Washington, has exhibited its thorough appreciation of the merits of this volume, the want of which has been hitherto much felt in the service, by subscribing for 700 copies.

"It is with great pleasure that we welcome the appearance of a new work on this subject, entitled 'The Artillerist's Manual,' by Capt. John Gibbon, a highly scientific and meritorious officer of artillery in our regular service. The work, an octavo volume of 500 pages, in large, clear type, appears to be well adapted to supply just what has been heretofore needed to fill the gap between the simple Manual and the more abstruse demonstrations of the science of gunnery. The whole work is profusely illustrated with woodcuts and engravings on stone, tending to give a more complete and exact idea of the various matters described in the text. The book may well be considered as a valuable and important addition to the military science of the country."—*New York Herald.*

Evolutions of Field Batteries of Artillery.

Translated from the French, and arranged for the Army and Militia of the United States. By Gen. ROBERT ANDERSON, U. S. Army. Published by order of the War Department. 1 vol. cloth, 32 plates. $1.

WAR DEPARTMENT, *Nov. 2d*, 1859.

The System of "Evolutions of Field Batteries," translated from the French, and arranged for the service of the United States, by Major Robert Anderson, of the 1st Regiment of Artillery, having been approved by the President, is published for the information and government of the army.

All Evolutions of Field Batteries not embraced in this system are prohibited, and those herein prescribed will be strictly observed.

J. B. FLOYD, *Secretary of War.*

"This system having been adopted by the War Department, is to the artillerist what Hardee's Tactics is to the infantry soldier; the want of a work like this has been seriously felt, and will be eagerly welcomed."—*Louisville Journal.*

Standing Orders of the Seventh Regiment, National Guard,

For the Regulation and Government of the Regiment in the Field or in Quarters. By A. DURYEE, Colonel. New edition, flexible cloth. 40 cents.

"This, which is a new edition of a popular work, cannot fail to be eagerly sought after, as presenting clearly and succinctly the principles of organization and discipline of a most favorite corps. An appropriate index facilitates reference to the matter of the volume."—*New Yorker.*

Ordnance and Gunnery.

A Course of Instruction in Ordnance and Gunnery. Compiled for the Use of the Cadets of the United States Military Academy. By Captain J. G. BENTON, Ordnance Department U. S. A., late Instructor of Ordnance and the Science of Gunnery, U. S. Military Academy, West Point, and First Assistant to the Chief of Ordnance, U. S. A. Second edition, revised and enlarged. 1 vol. 8vo, half morocco, $4.

Capt. Benton has carefully revised and corrected this valuable work on Ordnance and Gunnery, the first edition of which was published only about a year ago. The many important improvements introduced in this branch of the service have rendered such a revision necessary. The present edition will be invaluable, not only to the student, but as a standard book of reference on the subject of which it treats.

The Political and Military History of the Campaign of Waterloo.

Translated from the French of General BARON DE JOMINI. By Capt. S. V. BENET, U. S. Ordnance. 1 vol. 12mo, cloth, second edition. 75 cents.

"Baron Jomini has the reputation of being one of the greatest military historians and critics of the century. His merits have been recognized by the highest military authorities in Europe, and were rewarded in a conspicuous manner by the greatest military power in Christendom. He learned the art of war in the school of experience, the best and only finishing school of the soldier. He served with distinction in nearly all the campaigns of Napoleon, and it was mainly from the gigantic military operations of this matchless master of the art that he was enabled to discover its true principles, and to ascertain the best means of their application in the infinity of combinations which actual war presents. Jomini criticizes the details of Waterloo with great science, and yet in a manner that interests the general reader as well as the professional."—*New York World.*

"This book by Jomini, though forming the twenty-second chapter of his 'Life of Napoleon,' is really a unit in itself, and forms a complete summary of the campaign. It is an interesting volume, and deserves a place in the affections of all who would be accomplished military men."—*New York Times.*

"The present volume is the concluding portion of his great work, 'Vie Politique et Militaire de Napoleon,' published in 1826. Capt. Benet's translation of it has been for some time before the public, and has now reached a second edition; it is very ably executed, and forms a work which will always be interesting, and especially so at a time when military affairs are uppermost in the public mind."—*Philadelphia North American.*

A Treatise on the Camp and March.

With which is connected the Construction of Field Works and Military Bridges; with an Appendix of Artillery Ranges, &c. For the use of Volunteers and Militia in the United States. By Capt. HENRY D. GRAFTON, U. S. A. 1 vol. 12mo, cloth. 75 cents.

Manual for Engineer Troops,

Comprising Drill and Practice for Ponton Bridges, and PASLEY'S Rules for Conducting Operations for a Siege. The Sap, Military Mining and Construction of Batteries. By Capt. J. C. DUANE, U. S. Engineers. Plates and woodcuts. 12mo, cloth. *In Press.*

New Manual of Sword and Sabre Exercise.

By Captain J. C. KELTON, U. S. A. Thirty plates. *In Press.*

School of the Guides.

Designed for the use of the Militia of the United States. Flexible cloth. 50 cents.

"This excellent compilation condenses into a compass of less than sixty pages all the instruction necessary for the guides, and the information being disconnected with other matters, is more readily referred to and more easily acquired."—*Louisville Journal.*

"The work is carefully got up, and is illustrated by numerous figures, which make the positions of the guides plain to the commonest understanding. Those of our sergeants who wish to be 'posted' in their duties should procure a copy."—*Sunday Mercury, Philadelphia.*

"It has received high praise, and will prove of great service in perfecting the drill of our Militia."—*N. American and U. S. Gazette, Phil.*

"This neat hand-book of the elementary movements on which the art of the tactician is based, reflects great credit on Col. LE GAL, whose reputation is deservedly high among military men. No soldier should be without the School of the Guides."—*New York Daily News.*

Gunnery in 1858:

A Treatise on Rifles, Cannon, and Sporting Arms. By WM. GREENER, C. E. 1 vol. 8vo, cloth. $3.

Manual of Heavy Artillery.

For the Use of Volunteers. 1 vol. 12mo. Red cloth. 75 cents.

"Should be in the hands of every Artillerist."—*N. Y. Illustrated News.*

"This is a concise and well-prepared Manual, adapted to the wants of Volunteers. The instruction, which is of an important nature, is presented in a simple and clear style, such as will be easily understood. The volume is also illustrated with explanatory cuts and drawings. It is a work of practical value, and one needed at the present time in the service."—*Boston Commercial Bulletin.*

"An indispensable Manual for all who wish easily and accurately to learn the school of the Artillerist."—*N. Y. Commercial Advertiser.*

Auſtrian Infantry Tactics.

Evolutions of the Line as practised by the Austrian Infantry, and adopted in 1853. Translated by Capt. C. M. WILCOX, Seventh Regiment U. S. Infantry. 1 vol. 12mo. Three large plates, cloth. $1.

"The movements of armies engaged in battle have often been compared to those of the chess-board, and we cannot doubt that there are certain principles of tactics in actual war as in that game, which may determine the result independently, in a great measure, of the personal strength and courage of the men engaged. The difference between these principles as applied in the American Army and in the Austrian, is so wide as to have suggested the translation of the work before us, which contains the whole result of the famous Field-Marshal RADETZKY'S experience for twenty-five years, while in supreme command in Italy."—*New York Century.*

Rhymed Tactics, by "Gov."

1 vol. 18mo, paper. With portraits. 25 cents.

"It will strike the military man, familiar with the tedious routine of drill, by theory, practice, and memory, as a most unique and valuable method of strengthening the latter, with the least mental exertion. The author is a thorough soldier, and his ability as a rhymester will be conceded by any intelligent reader."—*New York Leader.*

"Our author deserves great credit for the ingenuity he has displayed in putting into verse a Manual which would at first glance seem to defy the most persistent efforts of the rhymer. The book contains a number of illustrations representing some of the more difficult positions, in the figures of which portraits of several prominent officers of the New York Volunteers may be recognized."—*New York Times.*

Maxims and Inſtructions on the Art of War.

Maxims, Advice, and Instructions on the Art of War; or, A Practical Military Guide for the use of Soldiers of all Arms and of all Countries. Translated from the French by Captain LENDY, Director of the Practical Military College, late of the French Staff, etc., etc. 1 vol. 18mo, cloth. 75 cents.

Nolan's Treatiſe on the Training of Cavalry Horſes.

By Capt. KENNER GARRARD, U. S. A. 1 vol. 12mo, cloth, with twenty-four lithographed plates. $1.50.

Official Army Regiſter for 1862.

New edition. 8vo, paper. 50 cents.

American Military Bridges,

With India-Rubber and Galvanized Iron Pontons and Trestle Supporters, prepared for the use of the Armies of the United States. By Brig.-Gen. GEO. W. CULLUM, Major Corps of Engineers U. S. A.; Chief of the Staff of Maj.-Gen. HALLECK; Chief Engineer of the Army of the Mississippi. Second edition, with notes and two additional chapters. 1 vol. 8vo, with plates. *In Press.*

Siege of Bomarsund (1854).

Journals of Operations of the Artillery and Engineers. Published by permission of the Minister of War. Illustrated by maps and plans. Translated from the French by an Army Officer. 1 vol. 12mo, cloth. 75 cents.

"To military men this little volume is of special interest. It contains a translation by an officer of the United States Army, of the journal of operations by the artillery and engineers at the siege of Bomarsund in 1854, published by permission of the French Minister of War in the *Journal des Armées speciales et de l'Etat Major.* The account of the same successful attack, given by Sir Howard Douglas in the new edition of his work on Gunnery, is appended; and the narrative is illustrated by elaborate maps and plans."—*New York Paper.*

Lefsons and Practical Notes on Steam,

The Steam-Engine, Propellers, &c., &c., for Young Marine Engineers, Students, and others. By the late W. R. KING, U. S. N. Revised by Chief-Engineer J. W. KING, U. S. Navy. Second edition, enlarged. 8vo, cloth.

"This is the second edition of a valuable work of the late W. R. KING, U. S. N. It contains lessons and practical notes on Steam and the Steam-Engine, Propellers, &c. It is calculated to be of great use to young marine engineers, students, and others. The text is illustrated and explained by numerous diagrams and representations of machinery. This new edition has been revised and enlarged by Chief Engineer J. W. KING, U. S. N., brother to the deceased author of the work."—*Boston Daily Advertiser.*

"This is one of the best, because eminently plain and practical, treatises on the Steam-Engine ever published."—*Philadelphia Press.*

"Its re-publication at this time, when so many young men are entering the service as naval engineers, is most opportune. Each of them ought to have a copy."—*Philadelphia Evening Bulletin.*

Manual of Internal Rules and Regulations for Men-of-War.

By Commodore U. P. LEVY, U. S. N., late Flag-officer commanding U. S. Naval Force in the Mediterranean, &c. Flexible blue cloth. Second edition, revised and enlarged. 30 cents.

"Among the professional publications for which we are indebted to the war, we willingly give a prominent place to this useful little Manual of Rules and Regulations to be observed on board of ships of war. Its authorship is a sufficient guarantee for its accuracy and practical value; and as a guide to young officers in providing for the discipline, police, and sanitary government of the vessels under their command, we know of nothing superior."—*N. Y. Herald.*

"Should be in the hands of every Naval officer, of whatever grade, and will not come amiss to any intelligent mariner."—*Boston Traveller.*

"A work which will prove of great utility, in both the Naval service and the mercantile marine."—*Baltimore American.*

A Treatise on Ordnance and Naval Gunnery.

Compiled and arranged as a Text-Book for the U. S. Naval Academy, by Lieutenant EDWARD SIMPSON, U. S. N. Second edition, revised and enlarged. 1 vol. 8vo, plates and cuts, half morocco. $4.

"As the compiler has charge of the instruction in Naval Gunnery at the Naval Academy, his work, in the compilation of which he has consulted a large number of eminent authorities, is probably well suited for the purpose designed by it—namely, the circulation of information which many officers, owing to constant service afloat, may not have been able to collect. In simple and plain language it gives instruction as to cannon, gun carriages, gun powder, projectiles, fuzes, locks, and primers; the theory of pointing guns, rifles, the practice of gunnery, and a great variety of other similar matters, interesting to fighting men on sea and land."—*Washington Daily Globe.*

"A vast amount of information is conveyed in a readable and familiar form. The illustrations are excellent, and many of them unique, being colored or bronzed so as to represent various military arms, &c., with more than photographic literalness."—*Washington Star.*

"It is scarcely necessary for us to say that a work prepared by a writer so practically conversant with all the subjects of which he treats, and who has such a reputation for scientific ability, cannot fail to take at once a high place among the text-books of our naval service. It has been approved by the Secretary of the Navy, and will henceforth be one of the standard authorities on all matters connected with Naval Gunnery."—*New York Herald.*

"The book itself is admirably arranged, characterized by great simplicity and clearness, and certainly at this time will be a most valuable one to officers of the Navy."—*Boston Commercial Bulletin.*

"Originally designed as a text-book, it is now enlarged, and so far modified in its plan as to make it an invaluable hand-book for the naval officer. It is comprehensive—preserving the cream of many of the best books on ordnance and naval gunnery, and is printed and illustrated in the most admirable manner."—*New York World.*

Elementary Instruction in Naval Ordnance and Gunnery.

By JAMES H. WARD, Commander U. S. Navy, Author of "Naval Tactics," and "Steam for the Million." New edition, revised and enlarged. 8vo. Cloth, $2.

"It conveys an amount of information in the same space to be found nowhere else, and given with a clearness which renders it useful as well to the general as the professional inquirer."—*N. Y. Evening Post.*

"This volume is a standard treatise upon the subject to which it is devoted. It abounds in valuable information upon all the points bearing upon Naval Gunnery."—*N. Y. Commercial Advertiser.*

"The work is an exceedingly valuable one, and is opportunely issued."—*Boston Journal.*

Notes on Sea-Coaft Defence:

Consisting of Sea-Coast Fortification; the Fifteen-Inch Gun; and Casemate Embrasures. By Gen. J. G. BARNARD, Corps of Engineers, U. S. Army. 1 vol. 8vo, cloth, plates. $1 50.

"This small volume by one of the most accomplished officers in the United States service is especially valuable at this time. Concisely and thoroughly Major Barnard discusses the subjects included in this volume, and gives information that will be read with great profit by military men, and by all interested in the art of war as a defensive force."—*New York Commercial.*

"It is no light compliment when we say that Major Barnard's book does no discredit to the corps to which he belongs. He writes concisely, and with a thorough knowledge of his subject."—*Russell's Army and Navy Gazette.*

Inftructions for Naval Light Artillery,

Afloat and Ashore. By Lieut. S. B. LUCE, U. S. N. 1 vol. 8vo, with 22 lithographic plates. *In Press.*

Steam for the Million.

A Popular Treatise on Steam and its Application to the Useful Arts, especially to Navigation. By J. H. WARD, Commander U. S. Navy. New and revised edition. 1 vol. 8vo, cloth.

"A most excellent work for the young engineer and general reader. Many facts relating to the management of the boiler and engine are set forth with a simplicity of language, and perfection of detail, that brings the subject home to the reader. Mr. Ward is also peculiarly happy in his illustrations."—*American Engineer.*

Screw Propulfion.

Notes on Screw Propulsion, its Rise and History. By Capt. W. H. WALKER, U. S. Navy. 1 vol. 8vo., cloth. 75 cents.

"Some interesting notes on screw propulsion, its rise and progress, have just been issued by Commander W. H. WALKER, U. S. N., from which all that is likely to be desired on the subject may be readily acquired. * * * * After thoroughly demonstrating the efficiency of the screw, Mr. Walker proceeds to point out the various other points to be attended to in order to secure an efficient man-of-war, and eulogizes throughout the readiness of the British Admiralty to test every novelty calculated to give satisfactory results. * * * * Commander Walker's book contains an immense amount of concise practical data, and every item of information recorded fully proves that the various points bearing upon it have been well considered previously to expressing an opinion."—*London Mining Journal.*

"Every engineer should have it in his library."—*American Engineer.*

RETURN TO the circulation desk of any
University of California Library
or to the
NORTHERN REGIONAL LIBRARY FACILITY
Bldg. 400, Richmond Field Station
University of California
Richmond, CA 94804-4698

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS
2-month loans may be renewed by calling
(415) 642-6233
1-year loans may be recharged by bringing books
to NRLF
Renewals and recharges may be made 4 days
prior to due date

DUE AS STAMPED BELOW

APR 14 1990

AUG 11 1994

SENT ON ILL

JUL 13 1998

U. C. BERKELEY

YB 04279